

# THE AUTOMOBILE

WEEKLY

NEW YORK, — THURSDAY, JANUARY 7, 1909 — CHICAGO

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Clocks built with a view to stand the jars and jolts and rough riding of Automobiles. Reputation the highest. Used by parties demanding the BEST.

**ALL SIZES STATED ARE THE APPROXIMATE DIAMETERS OF THE DIALS.**

All are 8-day High-Grade. All are in DUPLEX (patent applied for) polished cast brass cases, the most thoroughly water-proof case on the market. The "SPECIAL" clocks show dial on an angle; its inner cased clock when removed from outer (locked) case is excellent for use on mantels, bureaus, etc., when touring; its outer case is screwed to dashboard by hidden screws. The "SPECIAL" clocks are in large demand from dealers for owners of finest cars.

The MOTOR CLOCK has the same clock movement which for years we have supplied for the hard use on Locomotives, Steam Fire Engines, etc.; its dial is of same appearance as the AUTO Clock dial, but the Auto Clock movement has a somewhat finer train.

The 3 1-2 MOTOR "OFFSET" is likely to prove a quick, ready seller. Very attractive.

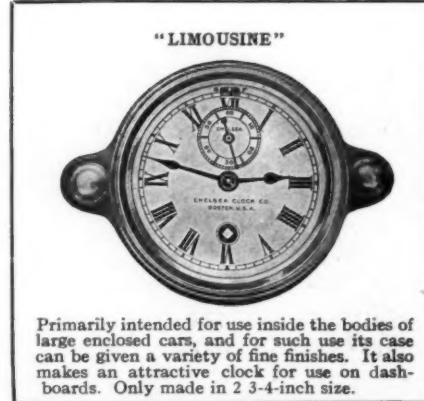
### PRICE LIST

Size	"Round"	"Offset"	"Special"	"Limousine"
2 3-4-inch Auto Clock	\$26.00	\$28.00	\$36.00	\$28.50
3 1-2-inch Auto Clock	28.00	30.00	45.00	
3 1-2-inch Motor Clock	24.00	26.00	41.00	

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Marine, Office, Ship's Bell Clocks, Auto Clocks, etc.

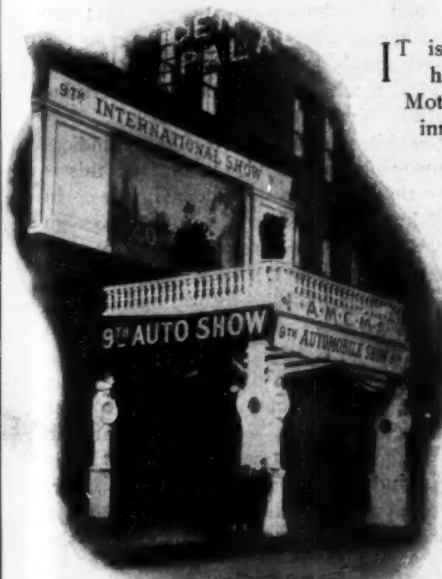


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Primarily intended for use inside the bodies of large enclosed cars, and for such use its case can be given a variety of fine finishes. It also makes an attractive clock for use on dashboards. Only made in 2 3-4-inch size.

# THE AUTOMOBILE

## PALACE EXHIBITION SUPPLIES EVIDENCE IN PLENTY



IT is a great automobile show that to-night closes in the Grand Central Palace, where it has continued for the past week most successfully under the management of the American Motor Car Manufacturers' Association, with the Motor & Accessory Manufacturers occupying innumerable spaces and the members of the Importers' Automobile Salon contributing the international feature of the exhibition.

In a building which is not suited to the needs of an automobile show, the handicaps of the Palace have been adequately overcome, due to the energy of a competent show committee guided by the managing hand of an energetic director in the person of one Alfred Reeves, who steps into the limelight as an exhibition manager second to none.

Furthermore, it is apparent that people nowadays attend automobile shows because they are interested in automobiles and not through any sentimental regard for any club or organization of which they may be members. 'Tis now a business proposition pure and simple, and the man who goes to look at the cars does so because the cars are there and he wants to see them. At the same time all credit is due to an organization like the Automobile Club of America for its pioneer endeavors in the show line and other fields of activity. Its care of the "infant industry" was timely and deserving of the results obtained, but this prodigy quickly learned to work and soon emerged from its swaddling clothes. Now it's capable and desirous of running its own race, and that's what it is doing, and the evidence of it is supplied in the huge success of the Palace exhibition.

Of course, "Society" does attend automobile shows as before, but the greater number of automobile buyers now come from the middle classes who utilize automobiles from the standpoints of necessity and pleasure, for it is a pleasurable necessity that the average man of some means does not care to do without in these quick-moving days. Quick individual transport was something that mankind had needed for many a day, and the automobile naturally came into its own as soon as it demonstrated reliability and flexibility with economical habits, which were not, unfortunately, apparent in the beginning.

The amount of education supplied by an automobile exhibition, especially in the metropolis of a country, should be commensurate with the undoubted heavy expense for several years to come, even though the Frenchman, who once occupied the center of the stage, wants to discontinue his elaborate show function—providing the Britisher, who is doing quite well, thank you, agrees to follow suit, which he won't do so long as he is ahead in the homestretch. There is such a thing as false economy and

was "Society Day," but, unfortunately, the rain came down more or less in torrents the greater part of the afternoon and evening. 'Tis doubtful if "Society" will have any more special days at Palace shows, possibly because they object to being placed on parade, as it were, though 'tis suspected that there are those who enjoy this to the fullest extent. For the seven days some 75,000 must have paid their way into the Palace.

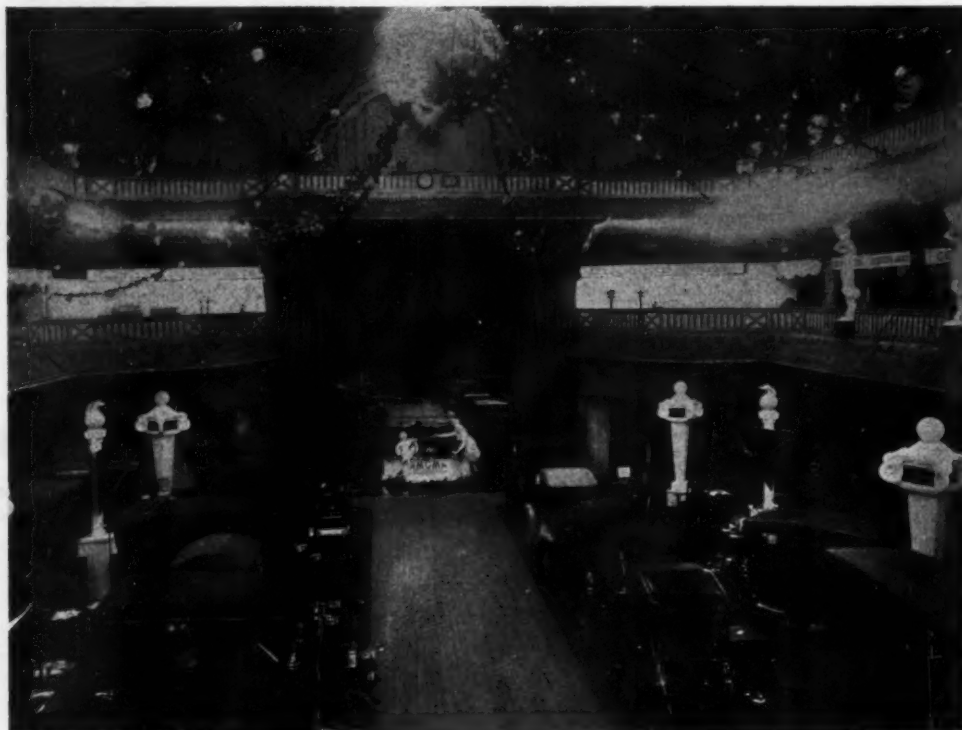
It is always a question strewed with difficulty to attempt a forecast of the actual returns in immediate dollars due to an exhibition of automobiles and accessories. On the other hand, mere curiosity would not coax an audience to any such place on an amusement basis, day after day. The Palace has been attended by prosperous looking autoists to an extent which makes for great discomfiture nearly all the time, from the opening of the doors to the closing at night, day after day; they talk automobile, discuss the points of merit, and act as if they appreciate the situation in all its phases.

In the meantime there is no doubt of the fact that methods are undergoing change on a basis that can be regarded as even fundamental. Take for illustration the question of accessories: the exhibition is largely one of the makers of these necessities, and that they are doing more of a wholesale business at the show than was the case formerly is assured. On the other hand, it is not assured that the retail business at the show is increasing at the same rate. There is nothing in this to be commented upon, unless favorably, since if the makers of accessories can bring their samples to some center mart of trade, and there meet all their customers, the end will be a reduction in the cost of disposing of goods, which as a rule foots up to a pretty penny.

Should the retailer ultimately find it unprofitable to go to the show with his wares, he will be benefited to the extent that customers will come to his place of business and save him the cost of the especial display. In this way, customers will be able to look at the samples at the exhibition, and get a line upon the improvements wrought; the retailer will have the advantage of being able to select from the several available sources the goods that, in his judgment, will find a ready market. Besides, it will be more easy to determine the likes and avoid the dislikes of the ultimate buyers.

The medium-priced automobiles, judging from show indications, are finding ready buyers on an extended scale, and this is a sign that means far more than the mere statement implies. In ordinary times it is a well-known fact that the prospectives go to the show to look. They decide on the circle of cars that they will give more detailed attention later on. The actual placing of orders is a matter that they extend into the future, and the exhibitors formerly regarded this state of affairs as equal to orders.

This year's automobiles were heralded as of great money value, months before the show opened, and in some measure sales were depressed in consequence; autoists having decided to await the show and take their pick of the best the market affords. They are now taking their pick, and the volume of trade is large, with preceptible haste in the buying, due in no small measure to the fact that there is a threatened famine of automobiles of the class in greatest demand.



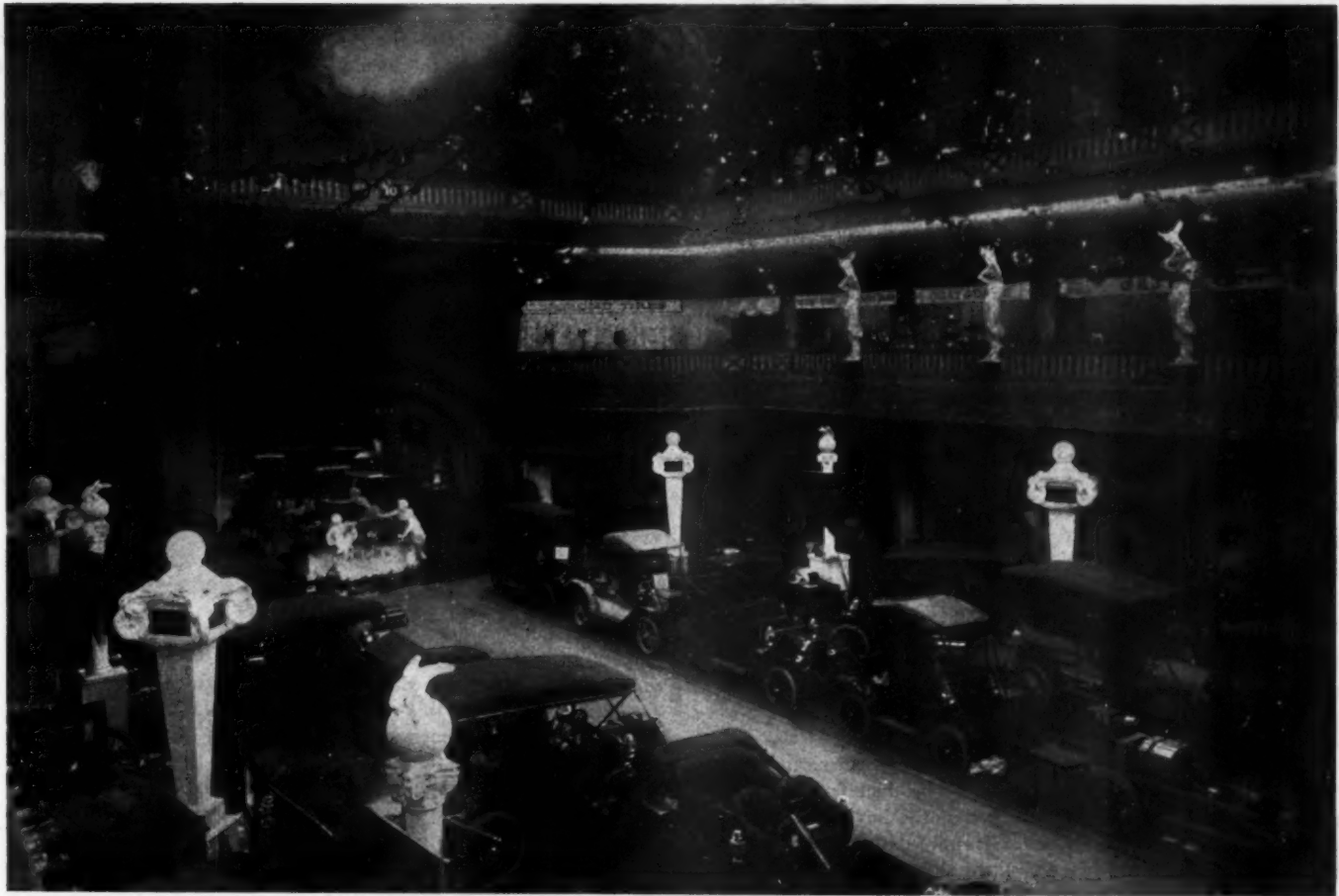
Looking Down the Main Aisle of the Central Exhibition Hall.

giving the public an erroneous idea, which might be detrimental to the continued and increased prosperity of the industry. Added to the desire to discontinue shows, or make them every other year, the Frenchman has decided upon the conclusion of high speed racing, in which direction the American has been an eleventh hour preparer, with the inevitable consequences of defeat when pitted against a rival that was invariably at the starting line long before the firing of the gun.

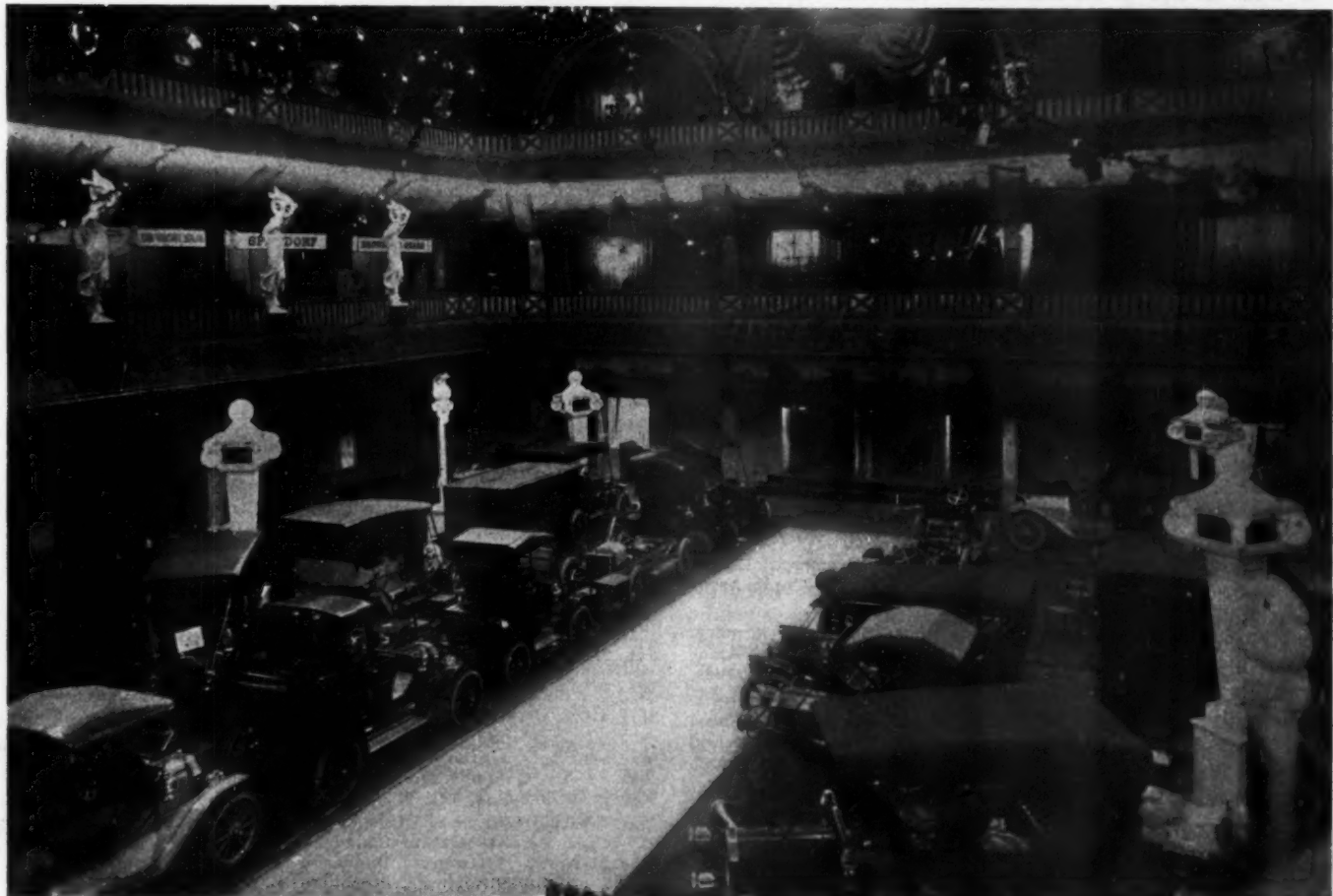
American progressiveness is the keynote of the Palace show, and even though compared with the best of the foreign makers, the home product holds its own and bids for patronage without any request of special favor for lesser price.

The attendance at the Palace, according to carefully prepared figures by the management, would make it certain that it will close with the best record of any previous American exhibition, and this means that thousands of people have carefully inspected automobiles for the first time, and many of them either have or will own motor-driven vehicles in the near future.

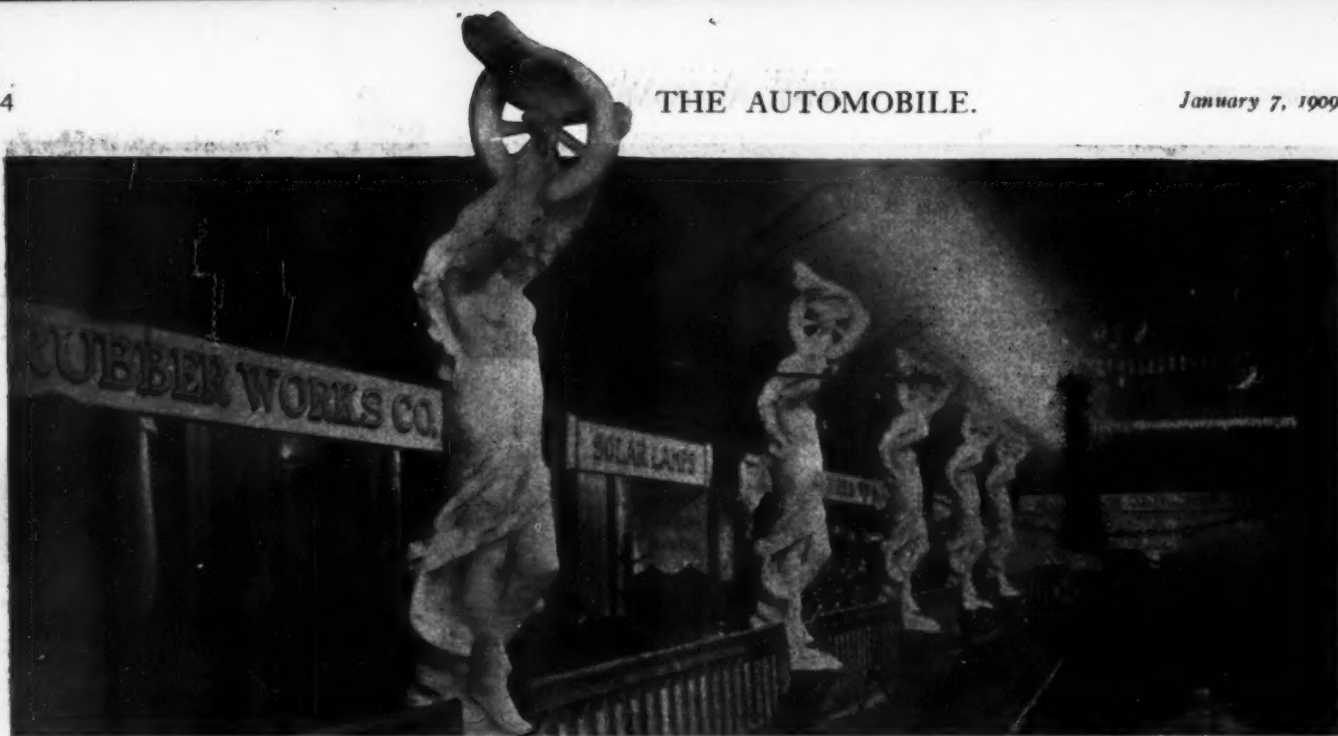
It would appear that the show is still an excellent asset for the industry in this country, for the interest of the public is always a good thermometer by which to reckon. For instance, Monday the figures showed over 15,000 attendance. Tuesday



Looking Northwest from the East Gallery, Where the General View of Exhibits Can Be Seen to Fine Advantage.



From the West Gallery, Looking Toward the Main Entrance, the Setting is in Good Taste and Picturesque.



Of the higher priced cars there is less of uncertainty than formerly, due to the lack of any great influence on the situation at the behest of the makers of foreign automobiles. The foreign makers can scarcely create a ripple on what seems to be a very placid situation.

There are examples of the best types of American cars at the show that "shine" alongside of any product from any land, and it is fortunate for the industry that the buyers of this class of cars know it. This situation is not actually new, but the patrons of the industry were a little slow in their appreciation of the fact. In other words, last year's cars were every whit as good as any product in all ways. This year the situation is even better in view of the fact that the American cars are with superior materials and it is not at all certain that the "foreigners" can hold to quality and lower the price as well. One thing is dead sure, they are not here for their health, and they will not hand out two dollars of material for less than two dollars.

The old skepticism is below the surface, if it exists at all. Dealing is on a far more pleasant basis, and the public is not so hungry for "ghost stories." Formerly it was claimed that to sell a car it was necessary to "invent" improvements, and some went so far as to talk about things that did not exist excepting in the imagination of the salesman (?). In a word, the public has improved in its understanding of what an automobile really

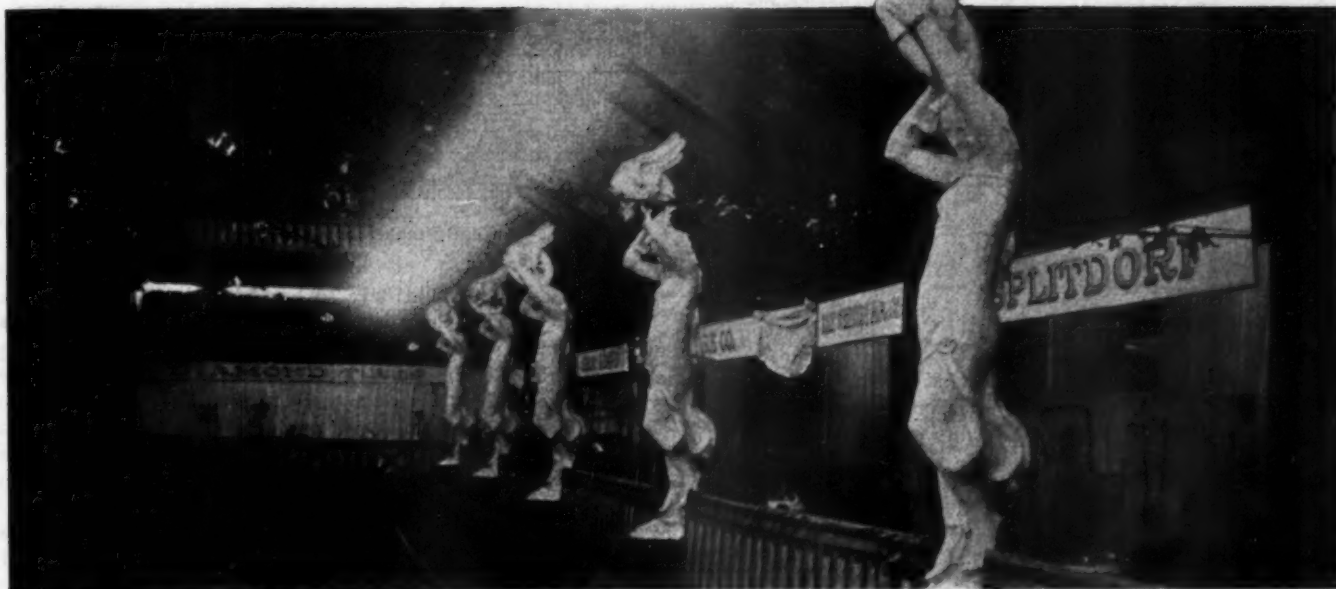
is and do not ask questions to which there is no answer. The makers of cars have taken cognizance of the better tone, and they are probably glad that the old "stringing" game is gone. To entirely eliminate this sad state of affairs, it has been necessary to provide salesmen of integrity, rather than "drummers."

Of the visitors at the show it would be impossible to state just how many carriage makers mingle with the rest. It is assured, however, that they are there in "droves." That many of them propose to "slide" into the automobile business is now assured, and it is up to them to settle upon the phase of the situation most likely to gibe with their facilities, assuming there is a market for the product. The buggy type of automobile is, to them, a great attraction, and they are endeavoring to ascertain the attitude of the public.

Of course, New York is not the greatest center of the users of buggy types of cars, but it is a fact, even so, that the demand for the buggy type is brisk, and the buyers come from Pennsylvania, "up state," and all the way from Portland, Me., and to the North. Last year, when sales were as scarce as "chicken's teeth," makers of buggy types of automobiles sold out at the New York show. This was one of the surprises of the year, and it is in a fair way to repeat. It is not to be wondered at then, if the carriage makers come to the Palace to feel the pulse of the public.

## THE AUTOMOBILE CALENDAR.

- |                  |  |                  |   |
|------------------|--|------------------|---|
| Jan. 16-23.....  | New York City, Madison Square Garden, Ninth Annual National Show of the Association of Licensed Automobile Manufacturers. M. L. Downs, Secretary, 7 West 42d St., New York City. | Feb. 16-18.....  | Denver, Col., Auditorium, First Annual Automobile Show, Denver Motor Club.  |
| Jan. 19.....     | Adjourned Fourth Annual Meeting, Society of Automobile Engineers.  | Feb. 18-25.....  | Toronto, St. Lawrence Arena, Third Annual National Automobile, Motor Boat and Sportsmen's Exhibition. Ontario Motor League. R. M. Jaffray, Manager. |
| Jan. 27-Feb. 3.. | Philadelphia, Second Regiment Armory, Eighth Annual Show, Philadelphia Automobile Trade Association.   | Feb. 20-27.....  | Newark, N. J., Essex Troop Armory, Roseville Avenue. Second Annual Show New Jersey Automobile Trade Association. H. A. Bonnell, Manager.            |
| Feb. 6-13.....   | Chicago Coliseum and First Regiment Armory, Eighth Annual National Exhibition, National Association of Automobile Manufacturers. S. A. Miles, Manager, 7 East 42d St., New York. | Feb. 20-27.....  | Hartford, Conn. Second Annual Show Hartford Automobile Dealers' Association.  |
| Feb. 15-20.....  | St. Louis, New Coliseum Building, Third Annual Show, St. Louis Automobile Manufacturers' and Dealers' Association. John J. Behan, Chairman.                                      | Feb. 24-27.....  | Omaha, Fourth Annual Automobile Show, Omaha Automobile Show Association, C. N. Powell, Secretary.   |
| Feb. 15-20.....  | Detroit, Wayne Pavillion, Annual Show, Detroit Automobile Dealers' Association. E. LeRoy Pelletier, Manager.   | Mar. 1-6.....    | Buffalo, Convention Hall, Annual Show, Automobile Club of Buffalo. D. H. Lewis, Secretary.  |
| Feb. 15-20.....  | Cleveland, First Regiment Armory, Annual Show, Cleveland Automobile Dealers' Company.  | Mar. 6-13.....   | Boston, Mechanics Building, Seventh Annual Automobile Show, Boston Automobile Dealers' Association. C. I. Campbell, Manager, 5 Park Square.         |
|                  |  | Mar. 8-13.....   | Kansas City, Kansas City Automobile Dealers' Association Show.  |
|                  |  | Mar. 27-Apr. 3.. | Pittsburg, Duquesne Garden, Automobile Show. Pittsburg Automobile Dealers' Association.   |



## LEVEL ON WHICH MERIT STANDS IS CONGESTED

By THOS. J. FAY.

**F**IRST approximations always have to be reviewed if it is desired to get at the bare facts; nor does it matter what the problem is when it comes down to a cold and critical review. The earlier review of the automobiles at the show was naturally the immature reflections which indicated what might well be termed "a lick and a promise," excepting that the tabulations were made with care, using the best information possible to procure.

The fear was that the first approximation, so called, might hold in its makeup that class of fallacies which generally does follow when one is a little charitable. As it is, in the light of further knowledge, gained by a close examination of the cars at the show, proof of a lack of sufficient knowledge of the real advance looms up like ghosts that do beset a stricken conscience. If it is not too late to revise the first impressions, in some particulars at any rate, it will be to do scant justice to the situation.

In former shows it was generally the case that here and there a fine example of the best types of cars could be seen if one were practiced in the art of "shopping"; a practice which is said to make one proficient when it comes to wading through a vast assemblage. On this occasion instead of the isolated cases of fine cars, it is to note but few of the class to be styled "below standard." But some joker stole the old standard, and in the replacing of it a better one was substituted; so much better, in fact, that the wonder is that any of the cars came quite up to it. In any attempt, then, to classify any of the cars as "below standard," it must be in the light of the fact that the standard was reconstructed on a basis which is a stranger to the autoist of a year ago.

Thus, to proceed and not to amplify the statements in a manner sufficient to exclude extravagance would be a waste of time. If the automobiles at the show are so much better than they were last year, in what way, how? It will not be possible to take each automobile at the show and tell of the ways in which each car stands out.

Materials as they are used in automobiles are from certain sources, and the first question is, are the materials to be had better than they were? If it can be shown that the materials are superior, then it will be possible to consider that the cars may reflect this condition.

Even if the materials have moved up it will be possible to have variations in design, and then it will be possible to consider

that some of the designs may not be so good as the others on the ground that all the designers are not of the same competence. Let us take a second look at this phase of the situation and see if it, too, has not a loophole in it. The lowest priced cars at the show are the ones that might be regarded as likely to hold undesirable features in their makeup. This is a fair assumption. But is it borne out by the facts? If the low-priced cars take advantage of the facilities of the "parts makers," of which there are several who have made a name in the trade, how can the cars be any worse than the parts of which they are composed? Is it not merely a case of the low price because the parts are turned out in vast quantities by men who have all kinds of experience in the respective lines which go to make the cars when the parts are assembled?

Let it not be supposed that the writer is advocating either low-priced cars or parts makers. The cars are at the show and the idea is to tell about them as they are. To sing a song of quality and not show the way in which it can be arrived at is to go it blind. The point to be made is this: The finest cars at the show are so self-evidently fine that the mere statement of fact is all that is necessary. The cars that do not show on the surface the qualities which reside in them are the cars, then, that must be laid bare to the eyes which will have to pay the bill in the long run.

Any purchaser of sense enough to roll off a log can tell at a glance the cars which are being carried along in the vortex of a great industry, and it will be impossible to discover any reason why a review of the industry should specifically pick out "black sheep," if such there are. On the other hand, it is far from right to assume that a car will always be faulty merely because on some occasion the designer made a slip. The sum and substance of the whole thing must be along lines taking into account the general trend. Is the general trend on the same level as last year, or did the art keep pace with time?

This is the question which has to be answered, rather than to say that every detail of every car in the show is up to a standard such as would please some overfastidious individual. And, again, the point of view must be taken into account. It would be perfectly foolish to assume, even for a moment, that a buggy type of automobile can serve as the equivalent of a standard touring car. On the other hand, the touring car cannot do the work that might be fairly expected of a buggy type. By this

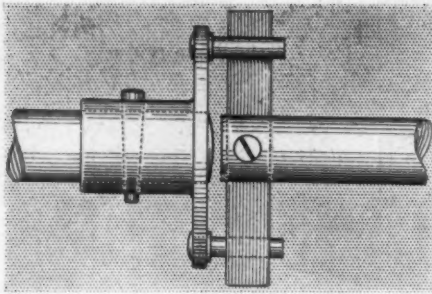


Fig. 1—A modern universal joint for pumps.

want, in view of the work to be done, and purchasers can be mistaken about it. A mistake in the selection of a car for a given task would in no way affect the quality of the car, although it might add evidence by way of indicating more conclusively the fact that the car as selected would render more satisfactory service in some other zone of activity. In other words, the quality of a car will be, (a) in the abstract, (b) for a given task to be performed. If a purchaser buys a car for a given purpose, and the car is not suited to the work, it is the purchaser's mistake and he will have to be content to charge the expense to profit and loss, mostly loss, and he will be in great good luck if it does not prove to be a dead loss.

It seems to be necessary to thus explain the influence of selection upon the question in order not to give the impression that this review is not by way of kind words. Of course, there is nothing in being too critical, especially since there is ample room for an honest difference of opinion in not a few cases. With this understanding it will be possible to put proper weight on

process of reasoning it is fair to conclude that the cars at the show have their respective tasks to perform, and the only question is, how well will they do it?

Every purchaser must decide for himself the kind of a car he may

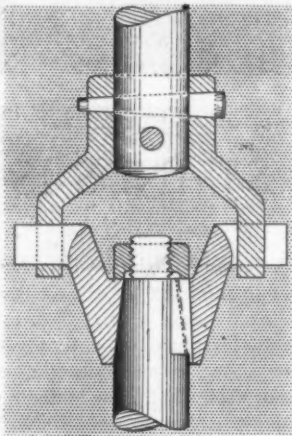


Fig. 2—Rather formidable magneto drive.

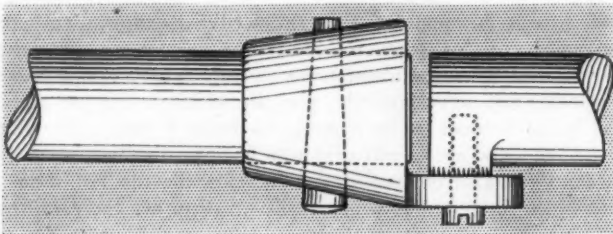


Fig. 3—Exit. A typical flimsy scheme of the past.

the statements and inferences with small chance of going wrong in the main.

All along the line the question is one in which it is almost impossible for a man to actually procure distinctly inferior products, simply because the standard has moved up, and the

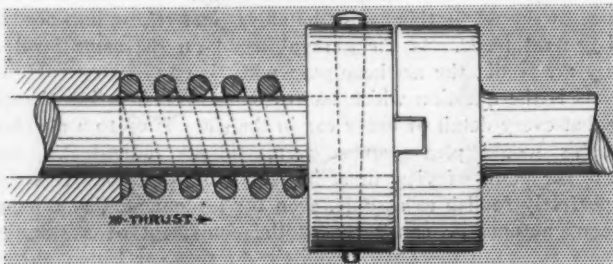


Fig. 4—It is no longer to be recommended.

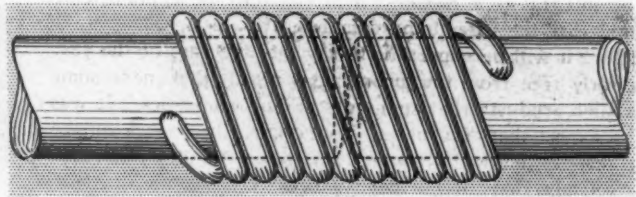


Fig. 5—An early makeshift that finds few advocates.

inferior materials would have to be obtained as "special" at a higher price. That there is plenty of room for improvement is a settled matter, but that the cars are abreast of the times is equally assured. If the Chinese invented the telephone five centuries ago, they were too early, since it was not possible to put them to commercial use until the world moved up to a "hot-foot" pace. In the same way it will be proper to await the time when the world will stand for more improvements in the automobile than are now in evidence.

As respects design features, there are a few things to say which will clear the atmosphere a little, and for the purpose of rendering the text a little more clear, it is proposed to illustrate the points. Fig. 1 shows a universal "safety" joint such as is used on cars of the superior design not to the exclusion of other and equally good methods. As will be observed, this joint is so made that if a pump is "froze up," the flat spring will snap around and the operator will be warned. The shaft will not be twisted off, because the spring is weaker than the shaft.

From this to Fig 2 is a long way in the wrong direction, and the designer who substituted a casting for the spring must have had water on the brain. This would not be so much of a crime were it not for the fact that the method was reported in a "technical paper" as one of the approved methods to use in automobile work.

In the same paper the scheme Fig. 3 was offered as a means to be employed. The screw used to connect the two members might stay in place long enough to go a couple of hundred miles, but it would surely be the first thing in the car

to fail. The first thing that is likely to fail in a car is the first thing to eliminate, and, while the matter is up, it may as well be said that the item in the makeup of a car that will last the longest is a little too good for the place if the quality that goes to make it everlasting is at any extra cost.

Fig. 4 is another idea that does not seem to be in the cars at the show, although it is recommended by some of the sharps of the technical press. In this cut it will be noticed that one of the enlargements is held in place with a taper pin and the other is integral. Surely this is not on the road to harmony in design that looks and is so good.

Fig. 5 is a makeshift, which is only recommended by the paper sharps; it can scarcely find many advocates on the ground that sooner or later the spring will be cut through by the sharp edges at the ends of the shafts; anyway, it is nothing to pay money for.

Fig. 6 is a very bad imitation of the device as illustrated in Fig. 1, and it is just as well to say many of the better designs have from time to time been badly copied, but it is fair to relate that the cars of the year are more nearly free of such things than they were in former years.

Fig. 7 is another variation of Fig. 4; but it is better, since there is no spring to cause thrust. Why one of the enlargements

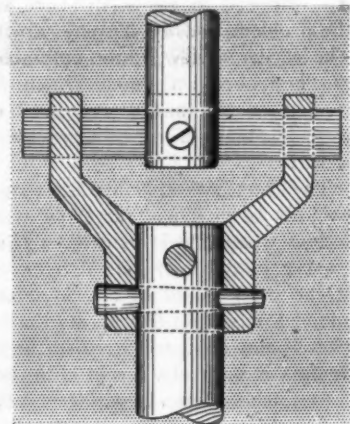


Fig. 6—Safety water pump drive.

should be integral is a matter which can only be explained on the ground that the assembling demanded it.

Right here it will be opportune to say that the cars of the year are singularly free from the incongruous details that made some of the earlier products the laughing stock of mechanics. It was natural to expect that "inventors" would leave their mark on the cars and that the mark itself would be by way of ideas, however good, in settings that mechanical engineers less prolific in ideas, but more skilled, would have to erase or revise.

There has been a goodly lot of this erasing, and of revising, so much so that any attempt at reiteration would be an impossible task. The old bicycle days are gone, the impossibles of the taper pin are too well known to be imposed upon buyers of cars, and good, sound mechanical work is having its day. Weight is eliminated in so far as this phenomenon is a detriment, and it is now known that a certain amount of weight is as necessary as the gasoline or the crankshaft. Of course it is possible to foresee a day when the gasoline will give out, and that the crankshaft will be eliminated in time—maybe a long time—to make way for the "gas turbine." When the day of no gasoline arrives it is certain that something better will be at hand to take its place. As to the turbine, it is of the future, with no chance of influencing the automobiles as they obtain at the present time.

There is one more point that is good to relate, i.e., while the body work of the present is high in the scale of quality, it is a fact that fine body work does not now throw dust in the eyes of buyers, as was the case in the early days. When some of the cars could not be sold because they did not grow a reputa-

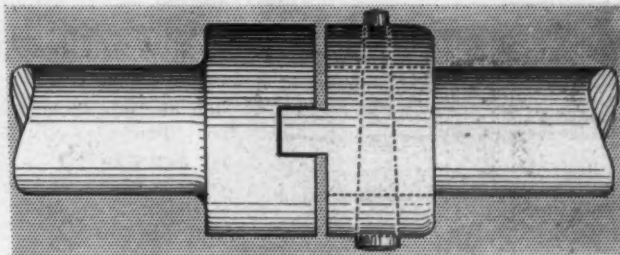


Fig. 7—One of the early types of joint.

tion on the merit of the chassis, it was formerly easy enough to hide the machinery under a fine body and sell the whole. As it is, while the patrons want good bodies, they also want good machinery. Fortunately, the makers of cars arrived at the same conclusion at about the same time, and it is a happy state of affairs that enables the patrons to find what they want at the show at the price which fits their inclination, assuming that necessity is not at the bottom of the wish. The fact remains that scant pocketbooks can do very well, especially now that the cost of keeping a car is within the bounds of reason.

If the discussion thus far will serve to indicate more nearly why the claim of superiority is not merely extravagant, it will be possible to mention such of the cars at the show as will fall within the deadline, in so far as the author has been able to give the details of the cars a fair measure of attention in the limited time at his disposal.

## SALIENT FEATURES OF THE AMERICAN MAKES

**AMERICAN:** American Motor Car Company, Indianapolis.—The underslung frame chassis of the American has always made it a car to be known even at a great distance away. The wheels are of greater diameter than is the usual custom, and the car looks long and low, thus giving the appearance of speed, which is also a phenomenon in cars of this make. The "Traveler" type of the American with 40-inch wheels is one of the most distinctive looking cars built, and this line is drawing the sight-seers at the show. The "Traveler" type is equipped with a 50-60-horsepower four-cylinder water-cooled motor, with cylinders 5 3-8 x 5 1-2 inches bore and stroke respectively, and the ignition is by "Bosch" magneto. The wheelbase is 122 inches, and the shaft drive is to a "floating" live rear axle of the best construction. In general the American cars bare the earmarks of the designer with a sharp pencil and a "think-tank" full of good ideas.

**AMERICAN-SIMPLEX:** Simplex Motor Car Company, Mishawaka, Ind.—This company has made a good success of the two-cycle proposition, and the cars in use are regarded

as up to a fitting standard. The 50-horsepower four-cylinder motor of the line with 5 x 5 cylinders is well liked by those who have given it a trial, and that the power is there is assured. Probably the one feature that will be of the greatest interest is that the flexibility of the motor is remarkable. This fact is worth bringing out because it is not uncommon to hear the four-cycle sharps make the claim that the two-cycle motor lacks in this essential particular. They know all about four-cycle work, and have no time to look into the virtues of the two-cycle motor. Of course, it is a good idea to be proficient in one language, so to speak. The fact does not debar the other methods. As Schley said: "There is glory enough for all."

**AUSTIN:** Austin Automobile Company, Grand Rapids, Mich.—This company turns out a 45-horsepower car as a runabout, the price of which is \$2,850, and the motor is a vertical six-cylinder, 4 1-2 inches square, with magneto and auxiliary coil and all the accessories which go to make a power plant complete. With a multiple disc clutch, a three-speed selective transmission gearset, and shaft drive, the car takes on



The Atlas Line Looked Substantial and Staple.



A New One Made in New York City—The Benner.



Brush Runabout, that Climbed Pike's Peak, in Foreground.

the characteristics of a splendid proposition and serves as an index to the Austin line of cars the like of which is worth going to the show to look upon, even assuming that the reasonable price asked is in excess of the surplus available in any given case. Of course this car as a runabout is intended as a vehicle to take no man's dust.



A Little but Active Auto for the Young Generation.

**ACME:** Acme Motor Car Company, Reading, Pa.—The Acme line is most complete, and a motorist who can not find among the Acme cars one to suit is rather overdoing it. The Acme "thirty" with a four-cylinder motor, cylinders 4 5-8 x 5 inches bore and stroke respectively, is conservatively rated, and in all respects it looks like a car for the man that cannot afford to buy one every year or two.



The Array of Powerful Chadwicks Was Imposing.

**ALLEN-KINGSTON:** Allen-Kingston Motor Car Company, Kingston, N. Y.—While this company makes two models—one of which is a 17-horsepower touring car and the other of much higher power—48-horsepower—the idea will be to concentrate the present discussion on the 17-horsepower car, which belongs to the more recent types involving "en bloc" cylinders, and it is worthy of note that in the cars of this company's make, "New Departure," two-in-one ball bearings are used, almost to the entire exclusion of plain bearings.

**BRUSH:** Brush Runabout Company, Detroit.—The model B with a 7-horsepower motor and a runabout body is sold at the low price of \$550, and in the home town (Detroit) there are a large number of these little cars treading their way around in a manner that lends them an air of utility which is rendered most apparent by beholding them. It is claimed that "no man is a prophet at home." This is a way of saying that the folks at home know just how much stock to take in any given proposition. It looks as if the "Brush" is pretty well liked at home, and it is a good sign. As well as the runabout the Brush delivery wagon is taking among merchants of business acumen.

**CAMERON:** Cameron Car Company, Beverly, Mass.—As the song went, "the Camerons are coming," etc. The song is out of date; the Camerons are here, and air-cooled at that. The four-cylinder runabout sells at \$900, with 3 7-8 by 3 1-2-inch cylinders' bore and stroke respectively. The car is one to attract more than passing notice especially among the friends of the air-cooled proposition, which for that matter is now in a fair way to come into its very own. The motor is equipped with a Remy magneto, and on the whole a healthy ignition system which is half the battle in any automobile. The cone type of clutch is big enough to do the work, and a selective three-speed transmission intervenes a shaft drive. The wheelbase is 96 inches, which is a fine length for a car of the class, and the wheels are fitted with 30 x 3-inch tires, in which is seen a desire to meet the tire situation in a fair manner. There are other Camerons, and the intending purchaser can find the data in "The Automobile."

**COATES-GOSHEN:** Coates-Goshen Company, Goshen, N. Y.—This company comes to the show for the first time with two chassis models—a 25-horsepower and a 32-horsepower—in which are incorporated a number of special features. The torsion member is a tube which parallels the propeller shaft and is fastened to it at the forward end by a collar. The housing tube terminates in a hollow ball joint within which the double universal centers, thus pivoting the propeller shaft and the torsion tube on a common center. The extensive use of ball and socket joints, ball bearings in transmission, straight-line drive, positive gasoline feed, and standard construction in motor and transmission, all go to complete a design which will attract attention. The cars present a good appearance and the body work is of the most recent class, both in point of design and finish. Beneath the surface, the body work is well executed, and time should not tell so seriously against it.

**CHADWICK:** Chadwick Engineering Works, Pottstown, Pa.—It was in the Chadwick that one of the important "foreign" companies found the "double bevel gear" that led to the adoption of the "direct on high" idea now so much in vogue. This incident is mentioned to bring out the fact that it is not, as some suppose, a case of going abroad to get ideas. As a matter of fact, the Chadwick set of brains was on the job on that occasion, and even a passing examination of this company's cars will disclose a baker's dozen of nuggets that would adorn any foreign make of car. The Chadwick has never resorted to "house top" methods of crying their wares; indeed, a look at the cars is enough to convince anyone that the company has been in the automobile business for some years.

In the car at the show the Chadwick Company offers to autoists a number of improvements for the first time, improvements that should go a long way towards advancing the automobile as a whole. Take, for illustration, the scheme by means of which the magneto armature is "twirled" in order that the magneto will

"spark" when it is desired to start the motor. With the magneto fitted out in the manner used by the Chadwick it is certainly possible to do with a magneto all that can be done with a coil and a battery during cranking. The Chadwick clutch is by way of an expanding band, the mechanism of which is very ingenious, in which a rack and pinion do the work, and do it well.

The transmission is semi-progressive, which is intended to give all the advantages of both the selective and the progressive systems, eliminating all chance of mistake on the one hand and reducing space and weight on the other. The side chains are in boots and the differential brakes look like practice boiled down. The cardan shaft is terminated in flexible ball joints, which have the facility of affording the requisite flexibility, and at the same time it is possible to disassemble the whole in the shortest time without moving the motor or the gearset. The chassis frame is reinforced at the narrowing point back of the motor and is made of chrome nickel steel. The crankshaft and the gears are also of this same material; indeed, the Chadwick situation throughout is on a basis using the finest materials for the purpose.

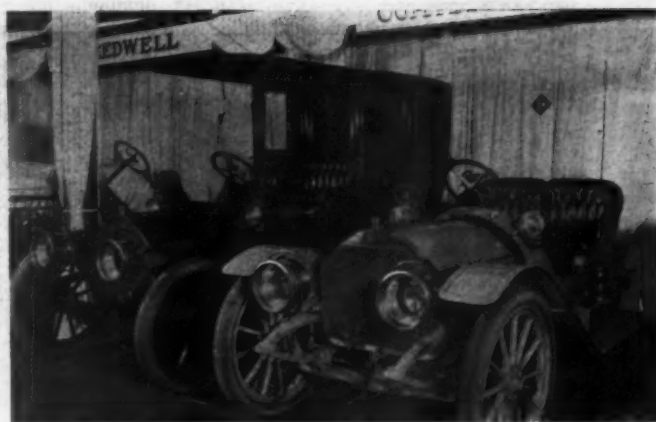
**CARTERCAR:** Motorcar Company, Pontiac, Mich.—The 18-20-horsepower runabout of this make is one to attract more than a little attention, the price of which is \$1,000, and in many respects the car is a revelation.

**CRAWFORD:** Crawford Automobile Company, Hagerstown, Md.—Hagerstown was always more or less addicted to the habit of supporting an industrial contingent, and it is even fair to say that this habit is stronger in Hagerstown than in most of the centers on the border of or below Mason and Dixon line. The Crawford seems to be a good representative of what can be done down there.

**DE LUXE:** De Luxe Motor Car Company, Detroit.—A \$5,000 automobile, and, as the name implies, it is in the class of the highest type of designed automobiles. Nor is the company content to be merely in the class. As a matter of fact, it is a case of design all over, using modern methods, inventing when methods of quality are not to be had, while the materials used are the best that money can buy, with a fine sense of discrimination when it comes to the placing of the materials. The 50-60-horsepower De Luxe model is a car such as will attract notice in any company.

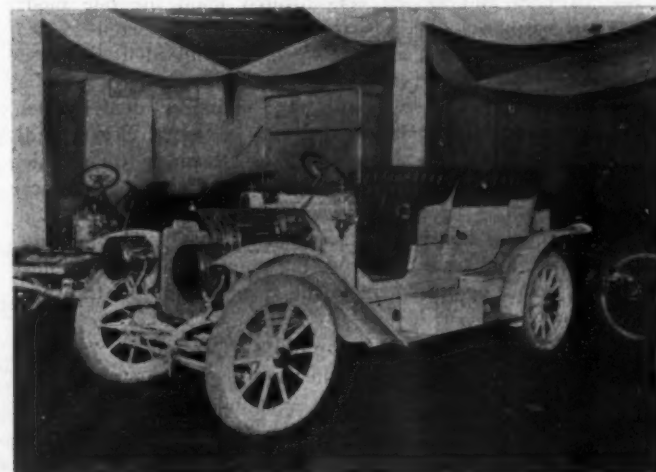
**FORD:** Ford Motor Company, Detroit.—Henry Ford made a name for himself which will cling for all time when he handed out a replica of a full-fledged automobile of the four-cylinder type at the price of a runabout—nay, at the price of the cheapest runabouts. Model T of the Ford line is in the same class, in that it is all automobile and no price. The Ford process ends in the delivery of nearly a hundred automobiles every working day, and, in spite of the low price, the quality of the cars and the enormity of the undertaking, it is generally conceded that Ford makes money.

**GAETH:** Gaeth Automobile Company, Cleveland.—Paul Gaeth is surely an automobile engineer. He may try to crawl out of it as Edison once tried to say he was not an electrical engineer, but the monument is there, and all who read may know. The Gaeth line differs from cars as they may be regarded in general, in that the problems are solved in a manner such as leaves the footprints of genius all over them. Gaeth does not set up the claim that his is the only way under the sun, but the users of Gaeth cars say it is a mighty good way, and that is more to the point. The cars of this make were written up in "The Automobile" a few weeks ago, and more than a little attention was called to the fact that the ignition, for illustration, was an ingenious piece of work. The "close coupled" is a neat automobile, with a 38-horsepower motor, four cylinders, 4 7-8 x 5 1-4 inches bore and stroke respectively. The ignition includes a magneto; the water cooling is of the thermo-syphon system, and the transmission is progressive with three speeds and a shaft-drive. The Gaeth line includes a delivery wagon, which makes for success.



Another Newcomer—the Coates-Goshen, from Goshen, N. Y.

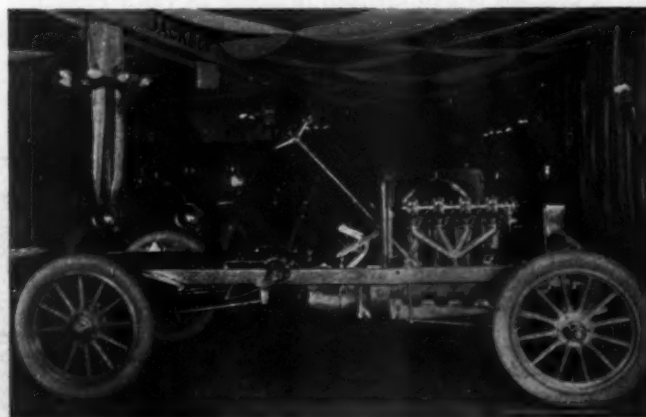
**GYROSCOPE:** Gyroscope Automobile Company, New York City.—Made by the Bloomstrom Mfg. Company, this product has secured quite a name for itself and is attracting its share of attention at the show. The speed changes are made by the transverse travel of a disc wheel across the face of the fly-wheel, and the increments of speed change are, therefore, as



The De Luxe Company Showed a Fine Model in White.

numerous as the increments of travel. The two-cylinder opposed motor is so disposed as to allow of this mode of procedure. In many respects this scheme is of great merit.

**INTER-STATE:** Inter-State Automobile Company, Muncie, Ind.—In any other business the older the company the more chance there would seem for commercial success. The automobile situation is different because there are not enough



Jacksons Were Shown in Profusion and Advantageously.



A Western Line of Good Ones that is Popular.

cars made to go around and if a company will make a point of building good cars, it will have little trouble in the act of getting rid of them. The Inter-State is a new car, but the designers seem to know what is expected and to produce just the kind of an automobile that is wanted by the patrons of the industry. The company very wisely refrained from endeavoring to put out a line of cars and having concentrated upon the one model it has the earmarks of that careful attention to detail so necessary to the success of a new company, if indeed it is not the secret of success in any case. The motor is a 41-4 x 5 inches bore and stroke respectively with four cylinders, dual ignition, and positive water circulation, as will be more clearly indicated by consulting "The Automobile" of December 31, in which tables of the data of cars were afforded. In divers ways the car is distinctive. The selective transmission is carried on the front end of the tubular housing of the propeller shaft. The motor is self-contained, and separated from the multiple disc clutch, since the clutch is in a compartment in the front end of the transmission gear set.

**JACKSON:** Jackson Automobile Company, Jackson, Mich.—Michigan seems to be the home of many makers of automobiles, and among them will be found the Jackson, which is neither last nor least. The model H "thirty" is drawing well, and it promises to be a popular Jackson model with the buying public as well. Some cars take with the public at large, and then there are the cars that are popular with hair-splitting experts, but Model H has decided to choose the "buying public" as its associates. Seems to be a good idea.

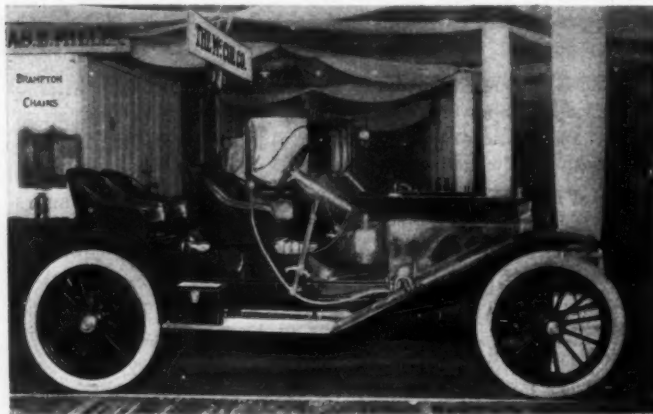
**KISSELKAR:** Kissel Motor Car Company, Hartford, Wis.—The Northwest is a favorable country in which to manufacture automobiles, because it is full of the finest mechanics, and materials are there in profusion. It is no wonder then that the KisselKar is well up to the mark. The price is low, due to the favorable circumstances attending its construction, and the company is well equipped to handle its vastly expanding



Kiblinger High Wheelers were Attractively Displayed.

trade. The new model "thirty" is something to take a look at, and the company has a "six" rated at 60 horsepower, using both the magneto and the Atwater-Kent system of ignition besides a lot of other equally good improvements.

**LAMBERT:** Buckeye Manufacturing Company, Anderson, Ind.—Originators of friction drives of the kind that have delivered satisfaction to users, the Lambert adheres to that method, which is a good indication of the practicability of the scheme, since to change would be a simple choice were the company so inclined. The line has expanded, and in numerous respects refinements have kept pace with time. Morse silent chains are used and with Rutenber motors, in conjunction with the Lambert friction drive, the line is in a way to prosper. Hyatt roller bearings are used wherever the responsibility demands anti-friction members. The new "thirty" is looked upon with favor.



The McCue Company's Exhibit—A New Connecticut Car.



Fine Taxies and Other Cars from the Hoosier Capital.

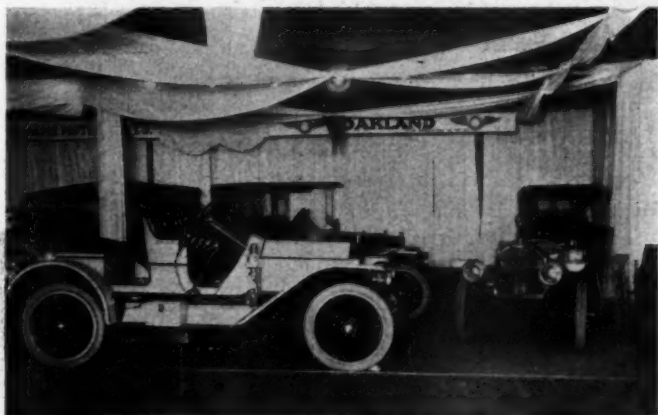
**LANE:** Lane Motor Vehicle Company, Poughkeepsie, N. Y.—The Lane has the distinction of being the "steamer" in the show. It is a pretty good illustration along steamer lines, and one would judge that the steamer contingent is wideawake from the many who take a keen interest in the Lane, which is developed to a high state of perfection.

**McCUE:** McCue Company, Hartford, Conn.—The cars of this make are new to the visitors at shows, but the principles of the McCue are those of the accepted practices of recent years. In other words, the McCue is an up-to-date car with a four-cylinder 30-horsepower motor, selective three-speed transmission, cone clutch, and shaft drive. The car looks like a decidedly good piece of work, and there is no reason why the McCue should fail to entertain its audience. As a matter of fact, few go by the car without giving it the benefit of their distinguished consideration.

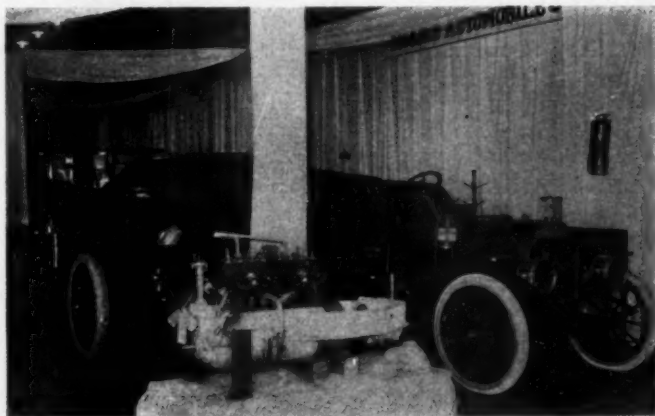
**MARION:** Marion Motor Car Company, Indianapolis.—The "six" of this make looks like something good, and the auto-

ists who make a point of studying cars must be of this opinion since they give it generous mention. This model is very complete, including a magneto in the ignition system and such other 1909 improvements as will be found on the more perfect cars of the year. The Marmon line includes a "four" that is worthy of more than passing notice, if indeed it is not a car that should command the respect of the man with a pocketbook.

**MARMON:** Nordyke & Marmon, Indianapolis.—The new "32" of this line has the selective transmission swung in the rear axle, and the plant is one in which road inequalities can have little effect, even under the most severe conditions. The four-cylinder motor is of the water-cooled variety, and the cylinders are 4 1-2 x 4 1-4 inches bore and stroke respectively. The chassis frame is of the conventional type, the double three-point Marmon idea having been disposed of in this model. The three-point suspension principle is applied, however, and the motor is so suspended.



Oaklands from Pontiac, Mich., Made a Good Showing.



The Moline Had Ample Quarters—They Were Well Staged.

**MAXWELL:** Maxwell-Briscoe Motor Company, Tarrytown, N. Y.—"Consistency is a jewel," and it is the consistency of the Maxwell that has never departed from its stable abode. Maxwell cars are as numerous as the countless fireflies which illuminate the meadows in the lowlands, and in every case Maxwell is inscribed on the front of the approaching car, only to be repeated at every angle that parallels the line of vision as it intercepts the car. Maxwell stands for stability in design, and a buyer does not have to consider the question of the next year's car because they will look like the cars of the year before. The metal bodywork does not have to be replaced; a fresh coat of varnish, and the whole situation takes on the newness that can only be possible if the foundation is there. The Maxwell line is extensive, and the cars of the several makes, or models, properly speaking, are well suited to the work they are intended to do. In spite of a certain sameness which the Maxwell has adhered to, the cars of this make



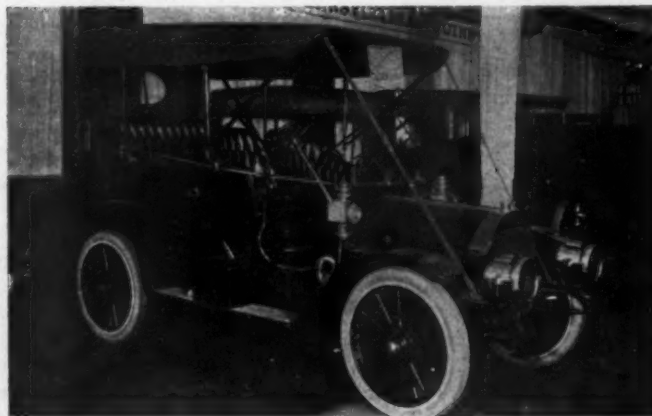
Prize Winning Pullmans and Some Trophies They Won.

have kept abreast of the improvements wrought in materials, and in the several details of any moment. The thermo-syphon system of water cooling that has been a success on these cars is, of course, retained, and the main features have proven to be so good that to change to some half-baked new ideas would have been foolhardy. The little runabout at the low price of \$500 is taking like hot cakes, and the doctor's car is one of the best of the line. The "double-opposed" touring car is still a very popular automobile, while more pretentious cars are available for the autoist who can afford to pay more at the hands of the Maxwell.

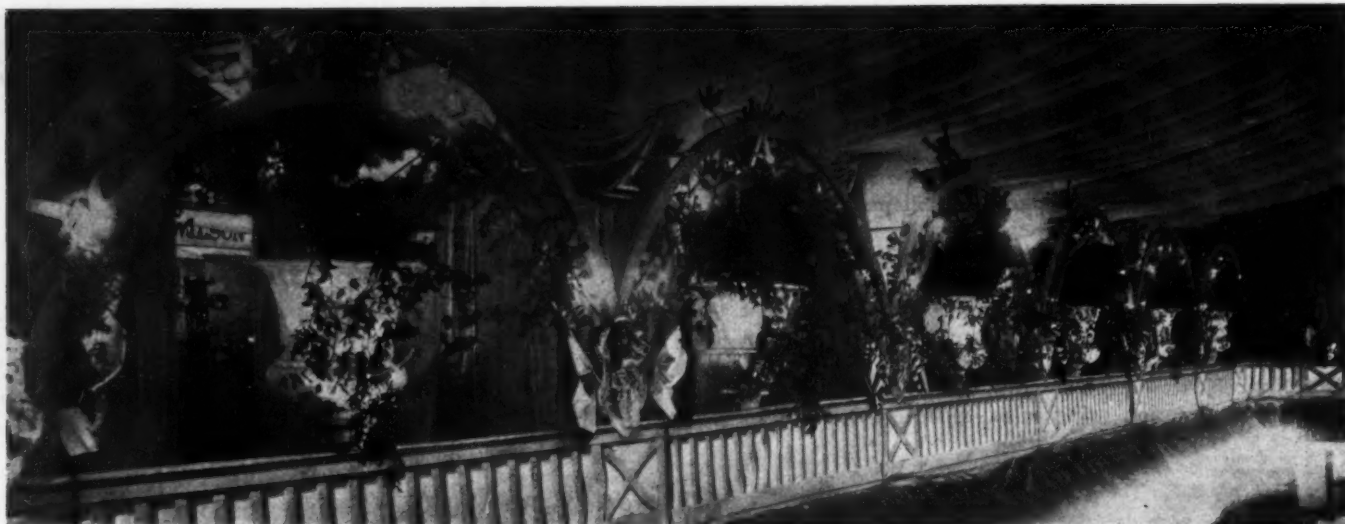
**MIDDLEBY:** Middleby Automobile Company, Reading, Pa.—The cars of this make are made in the shop once famous for the production of the Duryea. The situation is apparently well in hand, and the company offers a rather promising looking proposition by way of a runabout, and a surrey type is also built.

**MIDLAND:** Midland Motor Company, Moline, Ill.—With two models to choose from, the patrons of the company will surely find one to please. The Model E, for illustration, has a motor the cylinders of which are 4 1-4 x 5 inches bore and stroke respectively, and with four cylinders is rated at 25-30 horsepower. With a three-speed selective transmission, and evidence of good methods of design all the way through, it does look as if the Midland will make a good showing. The second model is with more power and is a more pretentious car in keeping with the difference in price.

**MITCHELL:** Mitchell Motor Car Company, Racine, Wis.—Racine is one of the greatest industrial centers in the State, and the Mitchell is one of the leading industries to be found there. Mitchell cars are in great numbers on the road, and even some of the oldest of them seem to run quite as noiselessly as any car should. The company took time by the forelock and



Pennsylvanias Shared This Space With Quinby Bodies.



The Top Gallery Decorations Artistically Blended into the Scheme Without Any Overdoing of the Plan.

put out a popular-priced touring car, which for size and general getup is of the greatest merit. The leader of the line is the "thirty," a four-cylinder car of the conventional sort, using a dual ignition system including a magneto, and in other respects it is plain that when a Mitchell is purchased at the price of the car, the purchase price is not merely a license to spend more money.

**MOLINE:** Moline Automobile Company, East Moline, Ill.—The Model M of the Moline line is a low-priced car which is attracting a good deal of notice. It is rated at 24-horsepower, and the cylinders are 3 7-8 x 4 1-2 inches bore and stroke respectively. The car is very complete, and should be a quick seller to autoists of discrimination. Model K is a higher powered car, with all the Moline earmarks.

**MOON:** Moon Motor Car Company, St. Louis.—The Moon ideas are still present in the products of the company, and getatableness is the underlying principle. True, the designs have grown and amplified, but the germ is there, and it is not one to be lightly thrust aside. Every autoist knows that trouble can creep into any part of a machine, and to be able to see, feel and work on the parts that require attention is a necessity if a repair shop is not carried along. Moon car work belongs to a school that can well be allowed to expand, and the models at the show are receiving a fair share of the attention of the visitors.

**MORA:** Mora Motor Car Company, Newark, N. Y.—Of "sealed bonnet fame," with cars which are looked upon by the autoists so fortunate as to own one as a possession enough for a king. The light six is a fine illustration of Mora practice in which the motor is rated as 42-50 horsepower. It is with six cylinders, 4 x 5 1-8 inches bore and stroke respectively. The selective three-speed transmission connects with a shaft drive, and the wheelbase is just about right, considering 36 x 3 1-2-inch tires, to give to the "light six" all the characteristics of road performance to be used to advantage. The Mora line is complete and interesting.

**NATIONAL:** National Motor Vehicle Company, Indianapolis.—In the class with the advanced designers along lines consistent with the accepted practices as they stand approved by the autoists of experience and discrimination, the National will face the world with two "fours" and a pair of "sixes." These cars have ball-bearing crankshafts, and since it is not new with them, it is assured that the ball-bearing crankshaft is well worth whatever the cost may be, although it is a fact that National cars are not high priced, if account is taken of the plan on which they are built. As a matter of fact, a "six" at \$4,200 is a car of wide promise at a very low price, as automobile value goes. In the cars of this year, of the make under

discussion, will be found many refinements, the character of which will round out a line of cars long regarded as prominent.

**OAKLAND:** Oakland Motor Car Company, Pontiac, Mich.—Put to a wide range of uses and well up in the scale of quality cars, once the "Spain castles" of the autoists who lent support to the industry in its infancy, who by their experience were enabled to picture in the mind's eye what a truly good automobile would be like. Many of the sturdy supporters of the industry now sport cars like the Oakland, and they are a contented lot; even the "old grumbler" who would kick if he drew a box seat in heaven, will be found purring like a contented cat in an Oakland. Take the Oakland "40," for instance, with its four-cylinder motor, with cylinders 4 1-2 x 5, 112-inch wheelbase and 34 x 4-inch tires. The car is one to give good satisfaction, and the price is \$1,600.

**OMAR:** Omar Motor Company, Newark, N. Y.—It would be jolly to be a "kid" if only to own one of the little Omar cars, built especially for boys and girls. The Omar is a real automobile, only it is the smallest real car offered and is intended to make life worth living—as a boy.

**OVERLAND:** Overland Automobile Company, Indianapolis.—With two additional models and all the features of Overland merit rounded out in a manner to suit the most fastidious, this company is in a position to do justice to its reputation. The new "six," with cylinders 4 x 4 1-2 inches bore and stroke respectively, is rated at 45 horsepower, which, with magneto, and all the improvements that belong on any automobile, makes a car that should take rank with the road performers of the day. The flexibility of this car is favorably commented upon, and as to the materials it is understood within the circle of the knowing ones that everything is all right.

**PENNSYLVANIA:** Pennsylvania Auto-Motor Company, Bryn Mawr, Pa.—This company, with a well-arranged plant and every facility for the purpose, has a fine line of cars to offer and they are attracting the notice of buyers of acumen. The model D 28.9-horsepower car with a four-cylinder motor, 4 1-2 square, is one of the line that seems to sell very well indeed. The price, \$2,100, is well within reach and the car at the price is one to consider.

**PULLMAN:** York Motor Car Company, York, Pa.—The model K Pullman is a car at \$2,000, with a 4 1-2 square, four-cylinder motor, ignited by Bosch magneto service, in which the details are worked out in a way consistent with the good qualities of the car as a whole. There is a certain simplicity about Pullman designs that seems to be difficult of attainment; and it is a good idea to tie up to. The Pullman line is complete, and there is also the fact that it is a product built under the direction of the company's own men in all particulars.

**PREMIER:** R. M. Owen & Company, New York City.—The "six" at \$3,600 and the "four" at \$2,500 make a fine pair, which, coupled with the performance of these models, accounts for the success of the company. It was one of the "Premier" cars which went and went until it collected some twelve successive centuries in as many days, and the worst thing said of it by the judges was that a brake-shoe "dragged" slightly, otherwise the brakes were unimpaired. It was understood among the members of the "inner circle" that the car did not have a fair show even as it was, because it had to be rushed to completion to be ready for the test on time. Of course, the Premier methods accounted in a measure for the fact that the "rush" did no great harm. A rigid system of inspection may be a nuisance according to the man who would like to get through, but it shows up well in a pinch and when it does not come to the surface it is still there, "just lying dormant" awaiting the emergency which will ultimately render its presence manifest.

**REO:** Reo Motor Car Company, Lansing, Mich.—The \$500 Reo runabout is so well and favorably known, and has so many thousands of users, that anything which one might say in its favor would be "stale news." This car formerly sold at \$650, and while the price is lower this year, the quality is better if anything. The roadster will sell for \$1,000, and so will the touring car. Both of these cars have the same chassis, and the double opposed motor is rated at 22 horsepower, which is conservative enough for a double opposed motor with cylinders 4-3-4 x 6 inches bore and stroke respectively. The Reo is a "sweet" running plant, and the fellow of the lean pocket book can well afford to look it over.

**REGAL:** Regal Motor Car Company, Detroit.—"The day of the inflated ideas and the enormous profit is past." So says the Regal. It must be when the four-cylinder "thirty" sells at \$1,250 and especially in view of the fact that the car is in every way a "conventional" proposition with just the design and the features that are supposed to be characteristic of a real automobile. The wheelbase is 105 inches, and the control is absolutely standard in every way. With a high tension magneto, water-cooling and a carbureter that eliminates dead points, the flexibility is thoroughly good in every way. As they say, if just a good automobile is wanted, "look it over."

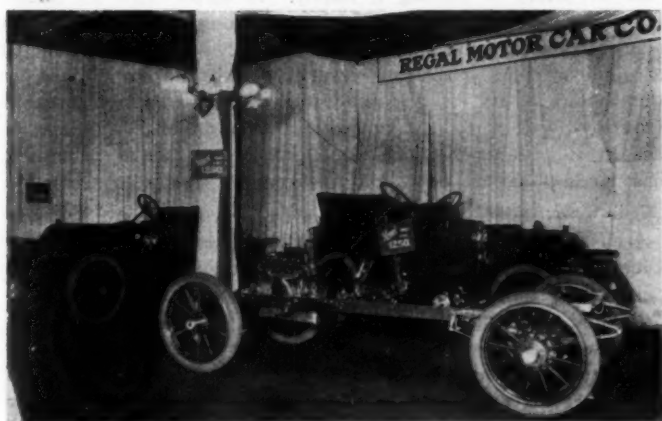
**SPEEDWELL:** Speedwell Motor Car Company, Dayton, O.—Difficult to get near enough to the exhibition to have a good look at the Speedwell. Fortunately, data was available from more reliable sources, and the general appearance of the car accounts for the "congregation." Must be a congregation, didn't look like a "soup house" contingent, and if they were short a few cents to make up the requisite \$2,500 they could easily borrow the difference on an "I. O. U." The motor in the Speedwell "40" is of the four-cylinder water-cooled type, with "Bosch" magneto and cylinders 4-3-4 x 5 inches bore and stroke respectively. A selective three-speed transmission serves as "catcher" for a cone clutch, and the shaft drive leads to a live rear axle with

Timken roller bearings to take the brunt of it. The 34 x 4-inch tires do the rest, and they are about the right size to be sure of the result.

**SHARP:** Sharp Arrow Automobile Company, Trenton, N. J.—Full 40-horsepower, no discount, assured since the four-cylinder motor has 5-inch square cylinders, and the "Bosch" magneto does the rest. The Sharp is just such a car as one would expect to do a mile-a-minute and not get out of breath. All the features are along recognized lines, and the car is attracting a good deal of favorable comment. The materials are rather good, and the distribution of the materials used is in accord with the actual needs in view of the arduousness of the service.

**STODDARD-DAYTON:** Dayton Motor Car Company, Dayton, O.—The last few years have seen a fine display of the cars of this make, not only at the shows but on the road. It is a little difficult to go anywhere and not see a shapely and graceful Stoddard-Dayton under happy auspices every once and a while. For \$2,500 the four-cylinder 45-horsepower is a thoroughly good proposition, and with a roadster body it is a road performer of no mean merit. The cylinders are 4-3-4 x 5 bore and stroke respectively, and with a magneto for ignition purposes and a good control all around, this car with its rather long wheelbase performs extremely well. It is a shaft-drive with a three-speed selective gear, well designed live rear axle, and the wheels are fitted with 34 x 4-inch tires. The touring model is in brisk demand, and the company belongs to the class that starts out right and do not have to come out with revisions every season. True, the Stoddard-Dayton is kept up to date—strictly, but it is rather well understood that "revisions" are by way of the elimination of mistakes in most cases. The cars of this make at the show present a fine appearance, despite the "jam." Certainly it would be well worth while to look them over in detail, under conditions such as would enable one to enjoy what seems to be a picture in harmony. Then, there is the assurance of past favorable performance.

**WELCH:** Welch Motor Car Company, Pontiac, Mich.—If Pontiac, Mich., never produced anything but the Welch automobile, it would still be doing its full duty to the nation. The visitors at the show with few exceptions will be wholly unaware of the fine qualities of the materials used in the Welch models; they will not know that the alloy steel in the crankshafts is the choicest of the choice. They probably will not appreciate the refinements in design that cost "midnight oil" and not a few of the spectators would say, "what's the use." On the other hand, it is just such painstaking care and the use of fine materials that make automobiles in the long run. If a pioneer cannot realize in coin of the realm, he can be satisfied with being right as he sees it, and he will surely benefit the industry as a whole in the long run. The Welch models at the show are attracting the visitors, and it is pleasing to note that a good many of them know a good car when they see it.



This Newcomer from Detroit Attracted Much Attention.



This Old-timer of 1876 Has a History, Told Elsewhere.



The Popular Renault Was Shown by Numerous Models.



A Pioneer German Car that Is Making Headway Here.

## AMERICAN STATUS OF FOREIGN AUTOMOBILES DEFINED

THE law of the survival of the fittest will apply to this situation as it does to every undertaking. All that remains is to define the fittest and the situation will be as bare as the Sahara. In the first place, the fittest in France, or in Germany, or in Italy, will not of necessity fill that coveted niche in "the land of the free." American roads may have much to do with the situation, but it is the American method of doing business that must in the long run obtain.

In America, for illustration, it is but to a small extent possible to trade on precedent. What Mr. A. does, the car he prefers to air himself in, will not serve for long as a "puller in" for all mankind in this country, because all are not sheep. Then, again, there is the question of discrimination to take into account. In this country it will not do to "discount" Mr. A. and "soak" Mr. B. Some of the buyers will stand for it, for the reason that "social" considerations will control; but in the long run it is not an American method, and the name—discrimination—once it is on the tag of a company will have much to do with the future of that company. Then there is the question of selling cars on a basis of "new," when, as a matter of fact, they are not new—after they change hands a few times. Moreover, the idea of giving a chauffeur say \$1,500 if his "master" buys a car is bad. All these methods bode ill for the company that does business on such a basis, and while it may take time to have the cat get out of the bag, the fact remains that the cat will get out.

Of the foreign companies doing business in America it is a fact that the companies whose business methods are sound are the ones that will remain, and they are the companies which cater to the wants of the community delivering a dollar's worth of automobile for a dollar. The dollar's worth of automobile should include a profit for the maker and the cost of dealing with the purchaser; but there is no reason why it should include a house and lot for the chauffeur. The car should be brand new, and it should be in good working order, or the seller should stand behind it for a reasonable length of time.

The average maker of cars in America knows full well that there is an everlasting penalty attached to the gross violation of sound methods of doing business, and if he expects to stay on the market, to avoid undue pitfalls is the natural thing to do. The wise ones from "the other side" with good cars to dispose of have refrained from offending to the greatest possible extent, possibly to the same extent that the American makers have kept away from "the pace that kills." At all events, it is a case of the survival of the fittest, and the fittest is measured in terms of business stability now that there are enough "good" American cars to go around. There are now no secrets in connection with the question of materials, and American makers were always in a position to furnish machine tools in keeping with the most

exacting situation, so that it is a fair inference that quality resides in cars from several sources.

When it comes to skilled labor, the educated workman will in the long run prove to be the one of dependable characteristics, and if he does get more dollars per week, he does more work in a week, thus giving to the patrons of the industry the benefit of brains, after they have gone through a course of sprouts.

That the foreign automobile has been a blessing in more ways than one is to be conceded by any fair-minded man, but it does not follow that the foreign maker can cash his check more than once. On the whole, even taking all these matters into account, it is a fact that some of the foreign cars are certain to survive, primarily because the cars are good, and again in view of the business acumen of the men behind them. They are the men who know the peculiarities of the American, and they do not risk loss by grossly offending.

**RENAULT:** Renault Frères Selling Agency, New York City.—The foreign car situation is not in a precarious state as far as this agency is concerned, for there is a good demand for the Renault, which car has earned and maintained a reputation in America that will hold it in good stead in the future. The Renault has always maintained that it is not good business to build fine racing cars, and on the reputation gained by them exploit the American public. As a result, the Renault exhibition is well patronized, and there are evidences of undoubted prosperity in the Renault zone of activity.

**LANCIA:** Hol-Tan Company, New York City.—The famous racing driver of this name, who made so many friends while in this country, seems to have imparted some of his enthusiasm into his product, for to say that this little car has "taken" would be putting it mildly. A motor with 3.5 inches bore and 3.9 inches stroke, driving through a selective type transmission to a final shaft drive, furnishes power sufficient to accomplish some surprising results. With the same cylinder dimensions a "six" is also built, the wheelbase being increased from 110 inches to 128 inches for this model. The special chassis, the "Lampo," which won the light car race at Savannah, has slightly larger bore and in general lighter construction throughout.

**BENZ:** Benz Import Company of America, New York City.—This company is not so well known to the American public, but it has ample opportunity to show its business acumen, and the reputation it brings from the other side is such as to serve as a good introduction. The Benz car was one of the pioneers of the world, and it is a dominant factor in Europe, both in racing and in the more useful fields of endeavor. Benz cars are to be had in the several customary sizes and with optional bodywork on a scale not to be outdone in pleasure cars.

## GREATEST PROGRESS POSSIBLE IN TAXICAB SECTION

ONE of the most marked phases of the taxicab situation, with reference to the progress made in the past year and the changes brought about in the working out of this progress, is the great gain in favor for the left-hand control. The strange part of this is the fact that left-hand control was tried, condemned and abandoned some years ago. To-day for taxicab use it is in favor, and most of the newer makes exhibited for the first time are so arranged.

In cars arranged essentially for public service use, the tendency toward unit construction, each unit being of the "quick detachable" type is very marked. This works out in engine arrangements which allow of a complete change in forty minutes, transmission layouts with which a shift to a new unit can be made in twenty minutes, and similarly with axles, clutches and other vital parts. In the way of giving the maximum possible mileage from a chassis, and consequently the maximum of profit, these arrangements come as near being perfect as is now possible.

Dropped frames allowing a very low center of gravity, and, incidentally, less racking, are now very general, while in conjunction with them three-quarter elliptic rear springs are universally used.

More provision is now made than formerly for baggage, the single front seat leaving a large space which, when suitably ironed, is very serviceable for this purpose.

A tendency is shown toward lower powers, the argument being that the public service car of hard usage must have a marked economy of operation to offset the high depreciation factor. This is only obtained with the very efficient and small motor. To carry the argument further, the manufacturers say that it is better to be underpowered 5 per cent. of the time and economical for 100 per cent., than to be overpowered for 100 per cent. and economical for 5. This is good logic from the point of view of the cab operator, as one spells failure while the other has success written on it in large letters. As bearing out this line of argument, witness the 10, 12, 14, 16 and 18-horsepower cabs shown, varying from a single cylinder up to "fours," most of the latter being *en bloc*.

**ATLAS.**—The new and growing field of the taxicab and its closely related field, town cars, are both well represented, the American makers vying with the foreigners as to who shall show the greater number. The foreign makers, however, are behind in one respect, viz., they have never paid any attention to the two-cycle motor; at least to qualify this, the makers represented at the Palace show have not. So in the two-cycle field of the taxicab makers the Atlas Motor Car Company stands alone. This company show a taxicab with their two-cylinder, two-cycle, 4 1-2 by 4 1-2 motor with offset crankshaft. As a public service vehicle the simple ignition system would be a big talking point, since it allows in part for a driver of lesser intelligence.

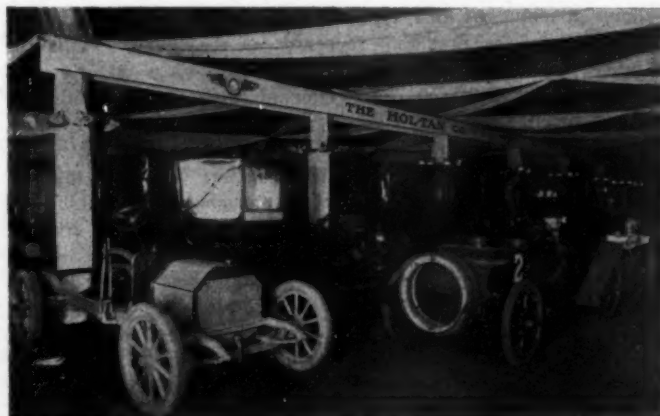
**C. G. V. TOWN CAR.**—The sloping hood made famous by this company is continued, the radiator now being placed in front of the dash instead of low down in front as formerly. Following latter-day practice, no torque rod is used, the shaft encasing tube which is made to take torque being strengthened above and below by light but strong truss rods. The motor is of the style now popular for small powers; that is, with cylinders cast *en bloc*. This maker pays particular attention to the proper relations existing between the tread, wheelbase and steering lock, with the result that an unusually short turning radius is obtained, almost short enough to turn in a Boston street.

**DE DION TAXICAB.**—One of the oldest and most successful of French makers, having specialized on single cylinder vertical motors, would naturally be expected to do something nice in the single cylinder town car section, and in this respect the De Dion-Bouton Company's exhibit is no disappointment. Following the latest foreign practice the dash is clean, all accessories being under the hood. This gives the car an excellent appearance when viewed from the side, the clean businesslike look being a very favorable one.

**FORD CAB.**—The most noticeable feature of this cab is the left-hand control, which allows the driver to look back, which is a big advantage in crowded streets. These enclosed cars showed up very well, the body work and upholstering surpassing the usual work of this nature turned out by this company. The Model T was shown in both landaulet and limousine bodies, either one of which would be suitable for town car work, although for taxicabs the former is usually fitted. A short wheelbase and a narrow tread give a very short turning radius, particularly desirable on the public service cars.

**GENEVA CAB.**—Among the many newcomers at the show, none made a better appearance than the Geneva cab, designed by Louis Mooers and shown for the first time. In common with many of the older makers, this company has decided to use left-hand control, a single driver's seat being fitted on this side with a large trunk space on the right side, suitably ironed to prevent damage to the car. A frame with a big drop just forward of the rear axle and the use of three-quarter elliptic springs gives the required low center of gravity with good riding qualities. In the construction of this vehicle, the manufacturers have taken the stand that public service cars or taxicabs are subjected to unusually severe strains, not only from the nature of the service, but from inexperienced drivers and a desire on the management's part to keep the car in operation as much as possible. A clean dash of selected circassian walnut, an aluminum foot and toe board and a Ewing landaulet body, combine to give a very harmonious picture.

**ROCKWELL CAB.**—The Bristol Engineering Company has developed the Rockwell public service cab. A close inspection



Where the Lancias Were Shown by the Hol-Tan Co.



Designer Mooer's Geneva Cab—Cleveland Autocab Co.

tion of this shows a very clear insight into the work that such a car must do and a very ingenious design with the idea in view. This car is all new and in no sense a copy. Commencing with left-hand control, continuing with *en bloc* motor, absence of spark advance, guard for radiator front, quick removable motor and transmission both on three-point suspensions, etc., right through, the thought bestowed on the design and construction is self-evident. In the matter of ready removal of either engine or transmission, it is said that the former may be taken out in less than an hour, while half that time will suffice to replace a transmission. In getting maximum mileage out of any given chassis, this feature will add a great deal, for by having extra engines

and transmissions in stock, the change can be made in about the time necessary to get out another substitute cab.

**SULTAN CAB.**—The majority of manufacturers in starting the production of a taxicab were obliged to copy from some other manufacturer or go through the bitter trials of experimentation. The latter course, if sufficiently remote, is by far the most preferable one, so that any company which can truthfully lay claim to being a pioneer has a big advantage over competitors. This holds true of the manufacturers in this company of the Sultan cabs, the Sultan Motor Company, which, although but four years old, is building under a license from the old French firm of Lethimonnier & Cie.

## MOTOR BUGGY ADVOCATES PLEASED AT THE SHOWING

**N**OT to be outdone by the larger and more expensive heavy trucks or the smaller and more costly cabs, the buggy type seems to gather to itself more friends every year. The number of exhibitors was greater, the number of cars exhibited was increased in numbers, both by a natural increase and by the greater number of exhibitors. The progress shown in this category is none the less marked because it consists mainly of improvement in small details rather than principles. The latter was proven correct years ago, and now it only remains to put on the finishing touches.

A decrease is to be noted in the size of wheels, but this is probably a sacrifice to appearances rather than the abandonment of a principle, the idea being to look as nearly like the touring car as is possible without altering other things. This is not carried to extremes, 34 inches being the popular as well as the minimum size. The use of water-cooled motors seems to have gained a little ground on the air coolers, as has wheel steering over the more simple lever. Some offshoot of the newer cab tendency to place the control on the left side was also seen.

**ANDERSON.**—These are being used largely in the Middle West by doctors, salesmen, collectors, farmers and business men in general. Their use is extending hand in hand with the pleasure car of small wheels and pneumatic tires, and women learn to drive them readily because of their simplicity, lightness and ease of operation. Three models are produced—A, B, and C, the latter having an optional equipment which includes artillery wheels with 30 x 3 pneumatics. All models are equipped with a new type of air-cooled motor of superior efficiency, having the valves in the head. The drive from the planetary transmission to the jack shaft is by single roller chain and to the rear axle by double chains, the latter being very short. Wheel steer is provided on all models. One interesting point brought out at this display is that the ordinary divided countershaft is weak because divided.

**BLACK.**—Another Chicago firm specializing in this type of car is the Black Manufacturing Company, of Chicago, which showed a number of types. These vary in bodies and wheel base, the largest having a nine-passenger body suitable for station wagons, summer resort use, etc. The smallest, on the other hand, is Model 12, a smart two-passenger runabout. The latter is the firm's leader for the coming year and is one of the lowest priced cars made anywhere. This, placing it within the reach of the multitude, should result in large sales, particularly as the details of the car show merit. One most peculiar thing on this car is the double frame. The rear axle, front axle and the tie rods joining them form one, the lower, while the upper framework of angle iron carries the power plant.

**HOLSMAN.**—The oldest and largest of the motor buggy manufacturers, the Holsman Automobile Company, of Chicago, were unfortunate in their choice of space, the section selected coming next to and across the aisle from high-priced high-grade touring cars. The comparison between the two made by the ordinary showgoer, would therefore be less favorable to the former than it would have been if located among the motor

buggies. In the latter situation the many meritorious features which have kept this car in the foreground and helped it to win the many reliability contests would have appeared to better advantage. This maker has steadfastly adhered to the chain cable, the final drive being a specially prepared cable, while the secondary drive to the transmission shaft is by silent chains, this feature making for noiselessness. In opposition with others who have slavishly followed automobile practice and fitted a steering wheel, this firm has continued to use lever steer, and all cars exhibited are so fitted. For the coming year a new higher-powered car with four-cylinder motor will be featured, known as Model H-15.

**INVINCIBLE SCHACHT.**—The increased number of high wheelers exhibited was a fair criterion of the increased interest in this type of car. It is said of one county in Kansas that six hundred machines are owned and another hundred ordered, of which over three-quarters are of the high-wheel type. This car appeals to the farmer and people in rural districts because of its inherent simplicity, lack of noise and low upkeep cost, due to fuel economy. This Cincinnati firm, the Schacht Mfg. Co., is prepared to get their share and more of this business with a simple, practical and economical car.

**KIBLINGER.**—While in the motor buggy class, the name of high-wheeler really is a misnomer for these cars, as the wheels are not high in the accepted sense of the word, 34 inches being the standard size on all models regardless of body, passenger capacity or type. In every other feature, however, this product follows in the lines of construction peculiar to the high-wheel cars or motor-buggies, as they are sometimes called. The power is furnished by a two-cylinder horizontal opposed air-cooled motor, and varies, 13½ to 16 horsepower being furnished on an equal number of classes, three each. In addition a larger model with 27 horsepower is now listed.

**RELIABLE DAYTON.**—Chicago seems to be the home of motor buggies; at least one might be inclined to think so, judging from the number of large manufacturers of this type of car located there. The firm in question has produced a thoroughly reliable machine of this type, so much so in fact that it has been dubbed "the first real successor to the horse." This reliability is brought about by the utilization of a water-cooled engine and of a sliding gear transmission. This sounds big and complicated, too much so in fact for a motor buggy, but as worked out in practice it is so small and compact that it would go in your hat. In fact one visitor at this company's exhibit overlooked it entirely, and looking at the chassis on exhibition, asked where the transmission was! Despite the extra cost of double chain drive over shaft drive this concern has stuck to the chains, and expects to continue using them forever. Following the better-touring-car practice, brakes are in the rear wheels, both internal expanding. A liberal use of ball and roller bearing throughout the car adds to the price, but also to the durability in a much larger proportion. The Reliable Dayton Motor Car Company, Chicago, is the manufacturer. The company reports good business and comment on the product is decidedly favorable.

## HEAVY TRUCKS SHOW MARKED ADVANCEMENT

By MORRIS A. HALL.

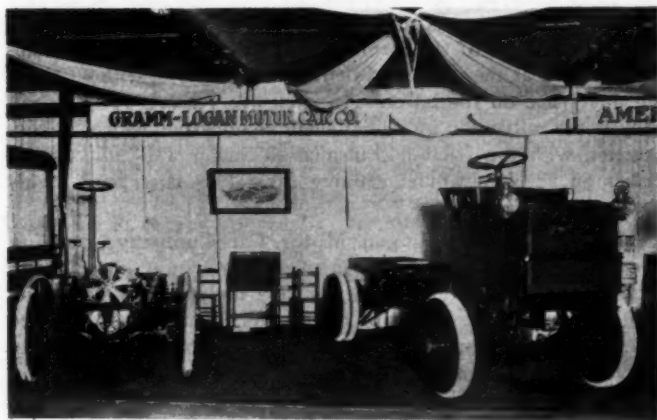
WHILE not as marked as its spread through the list of heavy trucks, the essential improvement in the other commercial fields, viz., the quick-removable unit construction, the left-hand control and other ideas, all made progress. This field was extended somewhat by the return of two of last year's exhibitors under new names and with an infusion of new life and many new ideas. Also, by the addition to the heavy car list of one of the light commercial car manufacturers. The latter showed for the first time a very heavily constructed truck rated nominally at five tons, but easily capable of a 60 per cent. overload. The bare fact that the maker tested it out under this excessive overload would show that our commercial manufacturers are learning fast the conditions under which their product works.

The exhibition of one of the best foreign trucks with a whole host of new ideas was one that doubtless was good for our builders. This truck is fitted with a self-starting device that actually works, an arrangement for using the motor as a brake by running it two-cycle and thus doubling the compression or

are shown and no advocates of this drive have changed sides. This situation is anomalous, to say the least, that the buying public should buy these drives without a cover for the dirt. From the manufacturers' side, the idea seems to prevail that there is no use complicating the situation and adding to the cost until the public demands a cessation of noise and is willing to pay for it. The silent chain drive so prevalent in England and elsewhere abroad has made no progress on this side, strange as it may seem.

Bodies on heavy trucks were few, most builders being willing to expose the mechanism to the public and explain the working of the same to the uninitiated. The few bodies shown gave evidence of a more advanced stage in wood working, as well as superior painting, trimming and upholstering.

**AMERICAN:** American Motor Truck Company, Lockport, N. Y.—Along the row of big trucks in the commercial vehicle section of the show, the product of the American Motor Truck Company was to be found occupying a central position. The



The Logan Was Easily Distinguished in New Guise.

braking strokes, fully lubricated springs and shackles, an unusually efficient carburetor and other features which will, at least, give our manufacturers food for thought.

Among the domestic trucks, the use of sprags to prevent a car backing down hill is on the increase. These do not always take the same form, some using but one, while others show a preference for two. The added weight in proportion to the total is so very slight that it would seem as if (granting that they are worth while putting on) two was the correct number. One maker very cleverly adopted a feature of railroad practice when he placed a sand box on the rear of the chassis with a lead to the ground a few inches in front of each rear wheel. A foot button is arranged to open both valves so that on reaching a slippery place the driver simply presses the button and sands the rails, so to speak.

Increased attention has been given to the running gear, if one may so designate the axles, springs and wheels. Axles are larger and heavier than before with stronger reinforcements. The new big truck, for instance, had a rear axle 4 1/4 inches in diameter of very heavy steel tubing. In the line of springs, superior material is being used and lubricated in some cases. This, while not a good report, is a positive advance over previous years. Wheels throughout are heavier, and now that prices have been cut, we find larger tires freely used. The use of twin rear tires is universal, but the full solid is losing some ground in favor of the sectional block or partially replaceable tire. No examples of wooden or steel tires were to be seen, although makers are known to be experimenting with the former type.

The question of final drive stands still, no new opposition has developed to the double chains, no new chain covers or boots



Rapids Were Shown in Profuse Sizes and Styles.

exhibit consisted of a five-ton standard truck chassis, which is unchanged from former years with four-cylinder motor, having individually cast cylinders, valves on the left, a governor for regulating the speed, planetary transmission, double side chain drive, and very heavy construction throughout, as would naturally be used on a truck of this capacity. The feature of the exhibit, however, was the showing of one of the new models. This was a one-ton delivery wagon known as Model S. This new "American" shows a few departures from the larger previous constructions, but these are more in the nature of up-to-date refinements than radical changes. The engine is a four-cylinder unit rated at 25 horsepower and has the cylinders cast in pairs with valves on opposite sides. From this very neat and compact power unit the drive is by shaft to a sliding gear transmission and thence by double side chains. While any type of body may be had the one shown was the standard box or delivery wagon body. The neat lines of this showed that the American people have excellent facilities for turning out good work, being an excellent sample of the body-builders' art.

For the coming season this company is listing for the first time, besides Model S just mentioned and the two old standbys, the 3 and 5-ton trucks, Model M, 1 1/2 and 2-ton truck, Model T, 1,000-pound delivery, and Models E and D, 16 and 20 passenger cars, respectively.

**ATLAS:** Atlas Motor Car Company, Springfield, Mass.—At the Atlas stand, hidden away in one corner, was one of the neatest little delivery wagons shown. This little power wagon was half hidden among the more popular touring cars, runabouts and town cars which surrounded it, but any one really interested in the work vehicles could not miss it. The body and

general chassis lines follow standard practice, but the main feature which makes this car different lies in the power plant, the principal part of the car. In this case it is an excellent example of the two-cylinder, two-cycle motor to which this firm has pinned its faith. A second feature which will be noted is the control, this being grouped on the left-hand side contrary to usual practice. The idea in this case is to allow the driver to look back when obliged to stop or reverse. With a weight of 2,300 pounds, a carrying capacity of 1,200 pounds and a motor conservatively rated at 20 horsepower, this car, known as the car that "delivers the goods," is well equipped and should show up well in actual service.

**BRUSH:** Brush Runabout Company, Detroit, Mich.—The prime feature of the Brush exhibit and one that was given the place of honor was the little runabout that climbed Pike's Peak. With all of the Western dirt and grime still on it, this sturdy little customer still looked ready for more. Besides this veteran and a sample pair of Pike's Peak-eaten tires, a delivery wagon, three passenger runabouts and chassis were shown.

**CARTERCAR:** Motorcar Company, Pontiac, Mich.—This strenuous advocate of the friction drive, recently removed from Detroit to Pontiac, Mich., where larger facilities are available, showed a model of each of Type H and the new Type K, as well as a convincing example of the friction drive in operation. The touring car chassis and the sample transmission shown served to show the delivery wagon made by this firm, the departures being (aside from the body, of course), few and insignificant, such as wheels, tires, etc. The success of this friction drive has been astonishing to advocates as well as skeptics. In fact, in the hands of this company so much progress has been made with it that they are offering a thousand dollars to any one who will slip the discs.

**COMMERCIAL:** Commercial Motor Truck Company, Philadelphia.—Another exhibit which was hidden away in a corner where no one would see it was that of the Commercial Truck Company of America, but one who was interested in electric trucks would take the trouble to hunt them up and find a chassis of the 1,000-pound wagon and a 2,000-pound delivery built for John Wanamaker & Company. These have a single motor shaft drive using worm and gear, only the rear wheels being driven. On the larger models, however, four-wheel drive and steer is employed, the motors being mounted directly upon the wheels. This interesting type was not exhibited.

**GAETH:** Gaeth Automobile Company, Cleveland, O.—While not advertising nor showing a delivery wagon, the Gaeth Automobile Company are building and cataloguing one, known as Type K. This is a one-ton machine with a single cylinder motor conveniently located under the footboard, which is readily removable for inspection or repairs. This is fitted with an excellent appearing closed delivery body and the whole appearance of the car is good. The makers state, however, that they have had very little demand for power wagons and consider the production of one at this time a trifle premature, which is their reason for not exhibiting a sample of the Type K wagon.

**GRABOWSKY:** Grabowsky Power Wagon Company, Detroit.—With a single exception this young and energetic manufacturer showed the largest exhibit of commercial cars. These were four in number, consisting of a state truck, express truck, sixteen passenger sight-seeing cars and a chassis. The latter was used to demonstrate the idea of this make, viz., quick demountable power unit. The truck is constructed with this idea in view, and as a result the power plant may be removed and another one installed in a remarkably short time, some claim as short as 10 minutes. This is accomplished by mounting the engine and transmission on a subframe of inverted V section. This in turn slides on the top and outside of another permanent subframe of V section. By opening the front of the frame, disconnecting six unions and a few bolts, this whole power department may be slid forward. Then a short piece of angle with a roller at one end and a special connection at the other attaches

to the ends of this subframe, four of these converting it into a truck with the engine and transmission on top.

**HART KRAFT:** Hart Kraft Motor Company, York, Pa.—There were many new faces to be seen, among which were the Hart Kraft Motor Company, with a new delivery wagon. This new company have wisely decided to concentrate their energies on a single type 1,000-pound delivery, which will be turned out in large quantities. This has a readily removable type of power plant, the engine, transmission, etc., being mounted upon a subframe which can be completely removed in less than an hour. This readily removable power plant idea is one that is gaining many friends and advocates every day, and the new company is to be congratulated on their foresight in choosing this feature.

**LAMBERT:** Buckeye Manufacturing Company, Anderson, Ind.—Among the numerous advocates of the friction drive is the Buckeye Manufacturing Company. This Indiana concern has gone in strong for it, and as turned out by them it has been a very successful device for the transmission of power. Whatever the individual may think cannot be put up against positive proof, as shown by such experiments as placing the front of the car against a brick wall, then turning on the power. This test the Lambert drive has gone through successfully a number of times. It is to be regretted that they did not show a delivery wagon, but the chassis and the various touring models shown conveyed the idea of the form of construction quite well, perhaps fully as well as the completed delivery would have, without wasting any space on the latter. An exclusive feature by this company is the utilization of a final silent chain drive, which, in conjunction with the friction transmission and a well-built engine, makes an absolutely quiet running car. This latter is a highly commendable feature.

**LOGAN:** Gramm Logan Motor Car Company, Bowling Green, O.—An old friend in new clothes would not classify as a new friend, so the Logan company under a new name will hardly come in the category of newcomers. These people showed two excellent examples of commercial wagons, one a 1,500-pound delivery car and the other a well-worked out example of a three-ton truck. The former shows very little change from the proven features of last year, including 25 horsepower, air-cooled motor, two-speed progressive transmission multiple disc clutch, double chain drive, etc.

The latter, on the other hand, while following last year's general lines, has a number of new features, many of them entirely original. Thus the fitting of a sand box to sand both rear wheels is a new one, as is also the use of hard steel rollers on one end of each spring in place of a shackle. A three-speed progressive gear set is out of the ordinary; so, too, are many of the excellent little details all over the chassis.

**MAXWELL:** Maxwell-Briscoe Motor Company, Tarrytown, Pa.—In bringing out their thousand-pound delivery wagon along the same lines that have been successful on thousands of touring cars and proven right by hundreds of tests, this company have made no mistake. This little work vehicle has the unit power plant multiple disc clutch and other features which have made the Maxwell a byword in every nook and corner of the land. The body work on a car of this sort does not need a piano finish, nor on the other hand would it be advisable to try to sell it without any paint or varnish. In this the Maxwell people have struck a happy average. The body has neat, pleasing lines and is painted and varnished just enough to make a nice appearance and wear well.

**MANHATTAN:** Mack Bros. Motor Car Company, Allentown, Pa.—This eccentric manufacturer shows the same as last year, one passenger car and one three-ton truck. The former, however, is a new departure in bodies, being of the sixteen passenger enclosed 'bus type arranged to be used for a pay-as-you-enter car. With this idea in view the driver is shifted to the left side, where he not only controls the car but the entrance and exit of the passengers as well. This type should have a good field in small towns.

**LANSDEN:** Lansden Company, Newark, N. J.—The attraction at this booth was the new dock truck especially built to work around docks, piers and terminals. This is a large platform, 14 feet x 4 feet and 28 inches off the ground, mounted on two wheels side by side equipped with 24 x 6 rubber tires and an additional maneuvering steel wheel at each end. The power is electric, Edison batteries being used and may be controlled from either end. Despite the ten-foot wheelbase, the truck may be turned around in its own length, owing to both front and rear wheels steering.

**PITTSBURG:** Pittsburg Motor Vehicle Company, Pittsburg, Pa.—The keen competition of recent years has had its result in the redesigning or improving of all cars. Particularly is this true of electrics. Among those electric commercial vehicles which have shown a big advance is the Pittsburg. This wagon has a very light weight for its carrying capacity, due to a superior battery of decreased weight and very light weight driving mechanism. Two cars are shown in the Palace exhibit, both new designs, one of 750 pounds and the other of 1,500 pounds capacity. Both of these are guaranteed for an overload capacity of 33 per cent., which speaks well of the maker's confidence in his product. Another strong point, although a little one, is the use throughout the car of standard threads and standard nuts, interchangeability and ready replacement being thus secured. This extends even to the wheels, all four of which are interchangeable.

**RAPID:** Rapid Motor Vehicle Company, Pontiac, Mich.—The largest, most complete and most interesting exhibit of commercial cars is that of the Rapid Motor Vehicle Company. Beginning with the new five-ton truck chassis and ending with the motor propelled chemical wagon, each separate car is of absorbing interest to any one vitally interested in these work vehicles.

The five-ton truck has many interesting new features. Among these are the use of the Hedgeland equalizer in place of a hit-or-miss differential, the telper spring above the rear axle, which only comes into play after about three tons of load have been put on, the sprags attached to the rear axle and operated by cables from the dashboard, the extra large tubular rear axle 4 1-4 inches in diameter, etc. The truck is built very heavy throughout, more so than its rating of five tons would warrant, so it is not surprising to learn that the factory have used it for weeks at a time with eight-ton loads.

Other exhibits are a very neat ambulance finished in white, a one-ton delivery, one and a half ton stake truck, one and a half ton standard chassis, twelve and twenty passenger sight-seeing cars, the Glidden tour truck, and in conjunction with the Tea Tray Company of Newark, a fire department or chemical wagon. The chassis of the latter was furnished by the Rapid company, while the equipment is by the Tea Tray Company. This consists of two large forty-gallon tanks connected to a reel of 3-4-inch hose. These tanks are arranged so that both may be used simultaneously for chemicals, both for water or one for chemicals and one for water; 250 feet of hose in 50-foot lengths is furnished

on the reel. In addition, there are axes, crow bars, bell, lanterns, lockers under the three seats, a 24-foot extension ladder, four three-gallon and two or more one-gallon hand extinguishers. Indestructible steel wheels are used and the car is geared to 25 miles per hour. The capacity of 12 men is afforded by three cross seats and three steps each for two men.

**RELIANCE:** Reliance Motor Truck Company, Owosso, Mich.—This company, like the Logan, is an old friend under a new name, the new company having just completed and moved into a large new building in Owosso, Mich. The cars exhibited are a two and a three-ton truck, and in addition a transmission. The latter, resembling nothing quite as much as a bathtub, is of cast iron, showing the modern tendency to eliminate aluminum on power wagons. These trucks are unchanged in detail from last year, the most notable feature being the engine, which is of the two-cycle type. The majority of these trucks are sold in the Middle West, where they are doing good work.

**REO:** Reo Motor Car Company, Lansing, Mich.—Naturally enough the pleasure car manufacturers, who have branched out in delivery wagons or other commercial ventures, consider this a subordinate matter and give first thought to the touring and other pleasure chasses. This is very noticeable on the ground floor of the Palace, where half a dozen of the large firms, who are known to have a power wagon of some sort on their list, have carefully refrained from taking up any space to exhibit them. In this category is included the Reo Motor Car Company. The public suffers a distinct loss in not seeing the neat little delivery wagon turned out by these people. Of small capacity and correspondingly small size, the power is well adapted to the work. The narrow tread and short wheelbase allow short, quick turns with a consequent saving of time which, according to John D. Rockinghorse, is money.

**SPEEDWELL:** Speedwell Motor Car Company, Dayton, O.—This new firm's commercial venture was recently pictured in these columns so that none of the details or description will be repeated. At the Palace show the commercial end was not exhibited, neither a chassis nor a complete truck. The builders state, however, that the features of their successful touring cars, which are applicable to commercial work, have been utilized on this newer venture and guarantee that the power wagons turned out will be fully up to the high standard of their touring car practice.

**STODDARD-DAYTON:** Dayton Motor Car Company, Dayton, O.—The makers of this popular car, the Dayton Motor Car Company, have recently announced the completion of a full line of power wagons in one, three and five-ton sizes, others being added to the line as necessity arises. However, none of these were shown at the Palace, the large space on the ground floor being given over entirely to touring cars and their motive power. An excellent example of a sectioned motor was shown, the upper part of the crankcase being glass covered to show the oiling system, while other sections showed the valves in action, the working of the piston, etc.

## THE MAXWELL-BRISCOE COMPANY'S FIFTH ANNUAL DINNER

IT was a "full house" that attended the fifth annual dinner of the sales organization of the Maxwell-Briscoe Motor Company, held Tuesday evening at the Hotel Manhattan. If anything were needed to supply evidence of the great growth of this up-to-date company, it certainly existed in the mammoth banquet hall filled to overflowing with district managers and agents from all over the country. Of course, Benjamin Briscoe, president and general manager, modestly told about the progress of the Maxwell, and J. D. Maxwell spoke most interestingly mechanically as to things here and abroad, he having recently returned from a visit to the Paris Salon. J. W. Wellington had for his subject "Accounting;" Ernest Coler spoke about "Adver-

tising," and C. W. Kesley's subject was "The Hustlers," he being the superintendent of sales. There were other excellent talkers, including Creswell McLaughlin, an after-dinner orator of the gatling gun order, his rapid firing calling for close attention. Lee B. Durstine made an efficient toastmaster. There is another slant to a gathering like this, coming as the participants do from all over the country. When each had told his story, it was plain to be seen that New York alone is not the palm of the hand of trade activity. The Maxwell line of cars, covering as it does a type of car to fill every want, enabled the representatives of the company to deal with all sorts of people from all over the land. All America is automobile excited and the fever is spreading.



## THE YEAR'S PROGRESS IN TIRE CONSTRUCTION

THE past year has doubtless been the greatest one in the history of the rubber trade, or to be more specific, in the automobile tire manufacturing business. In the automobile business every year shows progress, but this was not alone progress in that sense; it was an epochal year, a high-water mark so to speak. Following the lowest price of years for crude rubber, the past year witnessed a startling cut in prices. This cut was not made at the expense of the product, however, but was the natural result of three things, in almost every case investigated. These were: (1) the low price of the crude product mentioned above, which touched the lowest figure known in the past ten years, the same being equally true of fine up-river Para, Brazilian, and all other grades; that is, it was universal; (2) the completion of very extensive factory additions, some of which had been in the process of building for a very long time; and (3) the extreme outside pressure brought to bear upon the rubber companies by manufacturers and tire users, as a result of the hard times of the previous year and the extreme dullness in all lines of business resulting thereto.

With facilities equal to their enormous output and some natural future increase, and with improved mechanical devices installed coincident with the opening of large new buildings, it was possible to produce a better tire at a lower price.

Many and various were the improvements in factory methods which brought this about; thus in the matter of moulding or curing the complete tire the greatest improvement was manifested. This, which formerly took up three, four, and sometimes more operations, each of three to six hours' duration, is now usually completed in one operation of five to six hours. Not only does this save in time and material, but most of all the saving is in labor of handling, which is reduced to 20 or 25 per cent of its former bulk. As this is all high-priced labor, this big cut means a large amount of money as applied directly to a tire.

Notwithstanding the big cut in cost incident to superior methods of doing the work as shown above, it is now claimed that the single curing operation leaves the rubber in a superior condition

to that resulting formerly when curing took several operations.

Tubes are now made much heavier than formerly, and consequently less liable to puncture or rupture under excessive internal pressure. The paper thickness of the first bicycle tubes has gown and grown until the tube in excess of an eighth of an inch in thickness is the rule rather than the exception.

In shoes, however, the greatest progress has been made. The former trick which rubber and fabric had of getting an absolute separation from one another has now been eliminated, so that at best it is but as a memory. This happened, too, in the past with some forms of raised tread, the tread after some severe wear parting from the body of the tire. Superior methods of construction have obviated this. In shoe construction the non-skid or anti-skid treads have had a great deal of bearing on the result attained. The modern tendency has been in this direction, and no manufacturing process which did not take it into account was worth much. Even the largest tires with the heaviest beading or with the Bailey tread can be cured in a single operation with the rest of the tire.

An additional powerful influencing factor has been the matter of construction through the shape of the beading or other lower portion of the tire. This particular subject is of more interest to some than the tires themselves, and this feeling is partly responsible for the great progress made with these. They vary in size, style, types, and weight with the different inventors and the companies manufacturing them. In general it must be said that they represent a distinct stride in advance in one method of attacking the tire problem.

In conclusion one may sum up briefly the following advantages which the past year has brought to the automobile man in the way of tires: superior materials, better workmanship, more advanced methods of working the raw materials, heavier and more dependable tubes, more efficient treads on shoes either plain or for the prevention of skidding, progress in demountable tires, undoubted advances in removable rims, and, best of all, lower prices to the owner and operator.

**Ajax-Grieb Rubber Company, Trenton, N. J.**—This manufacturer of Ajax tires has built up a reputation, and incidentally a business, or perhaps this should be stated inversely, as a result of meeting the up-to-date "show me" tendency face to face. This was done with the guarantee proposition, which was nothing more nor less than a written guarantee for 5,000 miles of service with every tire. This guarantee was made in the full expectation of making it

good, and subsequent experience with the working out of it showed the astonishingly low percentage of 2 per cent replacements. In making a business-like guarantee of this sort it was to be expected that a tire was made that was fully capable of being guaranteed, so that the buyer gets the best of it both ways; in fact, it is hard to see how he can lose. This company is distributing to its friends souvenirs in the form of an indelible pencil, whose construction re-

sembles the now-popular ink pencil very markedly. By pressing the small end of the pencil, the lead is allowed to drop out into place at the other end.

**Batavia Rubber Company, Batavia, N. Y.**—The new Security tread used on Batavia pneumatic tires consists of two rows of depressions extending transversely on the tread from either side of a broad central tread part, which is left plain. These depressions are three-quarters of an

inch wide and one-quarter inch deep at the tread strip, and gradually decrease to zero at the outside of the tread portion.

**Continental Caoutchouc Company, New York.**—At this stand is exhibited Continental ready-flated tire and the demountable rim with which these tires may be used. These tires and rims have caused no little talk and aroused any amount of interest in this solution of the tire problem. In favor of this combination it is stated that a change can be made as quickly as an ordinary tire can be inflated. Continental round tread or A C flat, guaranteed for 3,500 miles; flat-tread type course, 4,500 miles, and non-skid steel studded, 2,000 miles, are fitted on Continental demountable rims. Those desiring to equip their car with quick tire repair devices should examine these tires and rims. The carrying of tires already inflated on spare rims has done more to eliminate tire trouble and make motoring a pleasure than any other product now on the market. The complete equipment consists of the necessary rim bands and attaching devices for four wheels, also two spare rims on which tires are carried already inflated. When trouble is met with the damaged tire and its rim have only to be removed and the already inflated tire carried as a spare exchanged in its place, taking less time than to pump the tire by the ordinary method. Each equipment is guaranteed to the extent that if not perfectly satisfactory it will be replaced at no cost to the purchaser. If the mileage above mentioned is not obtained, adjustments are made on this basis.

**Courtney Rubber Company, New York City.**—A line of extra heavy flat tread and anti-skid tread tires are shown, as well as the inner tubes which go with these pneumatics. Considerable handwork enters into the manufacture of these tires. The Courtney anti-skid consists of a triple line of steel studs, the feature of which is that it is possible to re-tread the tires. The handwork on these tires should be worth considerable to a prospective purchaser, for the very fact of hand work being used shows that the company is anxious to make a good tire. Similarly the re-treading feature of the anti-skid shoe is one well worth considering, this being impossible with most shoes.

**Dayton Rubber Manufacturing Company, Dayton, O.**—The product of this company is known as the airless tire, and this name indicates the type and construction of the tire itself. It might be called a cross between a pneumatic and a solid tire, or, to be more exact, call it a cushion tire. The construction, which is that of a solid tire with internal air pockets or chambers separated by walls of very thick rubber, has been likened to a bridge, the walls forming the columns, the reinforcement on the inside between the walls to the heavy floor beams, and the tread to the flooring or roadway. The claims made for this form of tire are that no pumping is necessary

as with pneumatics, nor are punctures or blowouts possible, that they will ride as easy as air-filled tires, will not crush under rated loads, are resilient and fast, will not eat up gasoline, nor deteriorate rapidly. To substantiate these claims only the best of Para rubber and Sea Island fabric are used, cured over a metal form in a single operation, and having the integrally cured walls proportioned to the rated load.

**Diamond Rubber Co., Akron, O.**—In the field of tiremakers the word Diamond stands out conspicuously as symbolical of all that the name implies. Time nor money have not been spared by the Diamond Rubber Company in working toward the end that what has been the constant source of annoyance and expense to the owner of an automobile, shall be materially improved each year. The tire man has been compelled to stand much hard criticism, and no one company is doing more than the Diamond to better this situation. For the coming season the product shows more than ever the advances in tiremaking, and it only needs the months of usage to prove the claims made for the new product. The owner, or the prospective owner, will do well in equipping his car for 1909 to make a thorough examination of the demountable rim designed especially for touring purposes, and the steel-studded casing as a non-skid is worthy of much commendatory criticism. Heretofore the light car owner has not given so much attention to the tire question because it has been his particular luck not to have much trouble.

**Dow Tire Company, Boston, Mass.**—Dow non-deflation tubes are shown. As is well known this non-deflation quality is secured by means of a flexible fabric which is incorporated in the walls of the tube. This fabric, consisting of a plastic compound made of feathers and especially prepared cement. In case of a puncture, a fibrous plug mechanically seals the hole. The tubes are, of course, especially shaped to receive this compound, the upper two-thirds of the tube being double, with a space between. It is in this space that the compound is carried. The tubes are adapted for use with any outer shoe, the

makers of it, in fact, do not make a shoe of any kind, specializing on the self-healing tubes. These weigh three times as much as the ordinary tube, but, while this sounds large, the actual additional weight is very little.

**Empire Automobile Tire Company, Trenton, N. J.**—These tires are made in four styles, the difference lying wholly in the tread. This is made in the old plain round tread; in a single cured Bailey tread; the favorite raised tread, which has a double thickness of rubber just in the center of the tread where the wear is greatest; and, lastly, a brand new non-skid studded tread. The latter is put on over the raised tread, and consists of a narrow band of double chrome leather with four rows of rivets through both thicknesses. The difference from most studded tires, however, lies in the rivets themselves, which have a case-hardened head for wear and a very soft, flat inner end. For Winter use and all-the-year-use on bad roads these will be the firm's leaders. In connection with their unusually heavy inner tube, this company is calling attention to the fact that very few tires are pumped up to the tire pressure which will give the proper service and is distributing tables of necessary pressures and of tire carrying capacities.

**Ennis Rubber Manufacturing Company, Newark, N. J.**—Although the Ennis tire has been on the market but one year, the company made an elaborate display in the Palace. It showed a line of motor car pneumatics, inner tubes, and motor cycle and bicycle tires, which it has just started in to manufacture. Although a newcomer, a vigorous and aggressive policy will be adopted and prospective buyers are assured of the loyal support of a large company, whose factory is equipped with modern machinery. More than this the oldest and best established firms cannot do.

**Faultless Auto Tube Company, New York City.**—This company exhibited its multi-inner tube tire in which instead of one there are four concentric inner tubes, all connected with the same valve. Ordinarily the outer tube is inflated, the three others remaining deflated within it. Should this outer tube become punctured the next outer one is inflated, and so on until all four have become punctured. The valve is such that the air can be injected into whichever one of the four inner tubes is desired.

**Firestone Tire and Rubber Co., Akron, O.**—In its big exhibition on the gallery floor overlooking the central space below, the salient features of the Firestone exhibit are two in number, viz.: the demountable rim and the new non-skid tread. The demountable rim may be used in connection with clincher or quick detachable tires, and consists of three parts: channel rim, locking ring, and demountable portion containing the tire. It has no narrow wedge shapes and no sharp angles so that its parts cannot rust together and make the



rim difficult to manipulate. The non-skid tread is formed by the raised oblique lettering "Firestone Non-Skid" arranged in double rows across the tread surface of the tire. It presents a great number and variety of edges and points of road contact, thus securing better anti-skid properties. This exhibit includes the motor truck tire.

**Fisk Rubber Company, Chicopee Falls, Mass.**—Fostering the modern desire for quick-change tire devices, this company showed and demonstrated the removable rim fitted with the heavy-car type of bolted-on tire. This was shown and demonstrated to the exclusion of the other worthy types of tires made by this company, showing that this was looked upon as the best form for the average autoist. As demonstrated in the Glidden tour the change of a tire may be made in from a minute by an expert to less than three minutes by a novice, this change being a simple matter of taking off five nuts and a ring, then replacing the tire by a new one and putting the ring and nuts back on again. This concern also calls attention to the insufficient tire pressure usually used and asks to have Fisk 5-inch tires inflated to 90 pounds front and 100 pounds rear, with other sizes in proportion.

**G. & J. Tire Company, Indianapolis, Ind.**—The successful business man has been mindful of the demands of the public. This company, ever alert to the requirements which would be demanded by automobilists, has taken full recognition of these demands and produced to meet them a superior article in the tire line. This line of tires is made from the highest grade of rubber and fabric, with good workmanship and on outlines that are the most essential in pneumatic tire constructions. No radical departure in construction is made for 1909. There have been improvements in mechanical processes used in the construction of the tire which have resulted in added toughness to the rubber tread. The line as it is to be shown at the Palace consists of the Standard, Clincher, Dunlop, and quick detachable clincher, all of which are furnished in either the smooth or the Bailey tread. New in the line is the Indianapolis G. & J. motorcycle tire of molded construction, made in the shape it assumes under inflation. This tire is supplied with corrugated, basket, or Bailey treads. Another motorcycle tire feature is the butt end tube, which is known as the Indianapolis socket-joint motorcycle tube, the name being derived from the ball-and-socket manner in which the ends slip together. The feature of this tube is that it can be removed from the tube or replaced without removing the wheel from the frame.

**B. F. Goodrich, Akron, O.**—The wonderful increase in the factory capacity of this company bespeaks the merit of its product, the past eighteen months alone having tripled the capacity, to say nothing of previous large additions and one at present under construction. The principal

feature of the exhibit at the Palace is the quick detachable tire, which is similar in construction to the regular clincher, but designed for easy application and removal without the necessity for any tools. This is accomplished by the use of detachable ring, provided with hooked ends which engage in slots in the rim. These hooked or locking ends can be released from position in remarkably short time, freeing the ring from the rim and leaving practically a flat surface for the tire to slide over. The ring is attached or locked to the rim just as easily and quickly as it is detached, the hooked ends engaging the rim slot almost automatically and in such a way that precludes any possibility of the ring working loose.

**Goodyear Tire & Rubber Company, Akron, O.**—After an unusually good year, the Goodyear people "bobbed up serenely" at the Palace show with the universal rim and the detachable tire. The latter is made with non-stretching piano wire tape in the base, which has got to break before the tire can be forced off. The rim made to be used in conjunction with this tire is demonstrated and a crowd keeps the demonstrator busy all day long putting the tire on and taking it off again. The famous racing driver, Barney Oldfield, makes use exclusively of these tires and rims on all of his racing machines, because of his high regard for them. The company is distributing a folder in which an extract from the *Chicago Record-Herald* gives an interesting account of Oldfield's own description of the sensations of record-breaking drives, in which incidentally he says a good word for this tire and rim.

**Hartford Rubber Works Company, Hartford, Conn.**—This concern offers for public inspection its line of tires and rims with which the public already is familiar. No additions to the line have been made, but the company is pointing with pride to its quick detachable rim, which is on exhibition. This is the rim approved by the mechanical branch of the A. L. A. M., which, by the way, is largely responsible for the form. It is adaptable to the standard clincher or the Dunlop tire by simply turning over the removable ring. In addition truck tires are shown, the only change being a minor one. This is the cutting away of the extreme corner of the base along a diagonal line, which results in a better holding device, and consequently a better cross compression. The tread is unchanged.

**Healy Leather Tire Company, New York City.**—Besides its well-known leather tire from which they take the name and which has attained considerable fame both here and abroad, this company shows its demountable wheel. This is very different from the ordinary run of demountables in that when removed the ends of the spokes are left bare and exposed. A tenon fits onto each spoke and an anchoring lock bolts to this and holds the rim firmly. Although there is thus a bolt for every spoke,

a special bit is provided for taking them off, and it is claimed that the complete change can be made by unskilled operators in less than three minutes.

**Irving Snell, Little Falls, N. Y.**—This maker exhibits a resilient cushion tire with a non-skid tread. The tire is made up of several layers of rubber mounted upon the felloe in such a manner as to slide laterally a short distance. This cushioning effect is increased by a number of holes, which extend through the length of the rubber. V-shaped ridges on the circumference or tread serve as cleats, increasing the traction, and act to prevent skidding. Air may circulate through between the ridges, and for this reason the additional claim is made that they raise less dust than other solid or cushion tires.

**Michelin Tire Company, Milltown, N. J.**—A number of tire accessories are shown, including the newest Michelin valve spreader, which is a little device that makes the use of security bolts and lugs unnecessary with clincher shoes. Of course, these were incidental to the large line of both commercial and racing types of demountable rims, and the full line of tires, including plain, flat tread, and non-skid. On the racing rim the tire is carried by a split ring, the ends of which are united by a turnbuckle. To remove all that is necessary is to turn this turnbuckle enough to allow the ends of the rim to slip off.

**Morgan & Wright, Detroit, Mich.**—Two new tires and a quick detachable rim are shown. The new rim is operated by snapping or unsnapping a locking ring, the only tool required being a small screw-driver or a sharp-pointed file, which can be used as a pry. The security of the fastening is entirely independent of the inflation of the tire. A heavy flat tread tire mounted on the standing universal quick detachable rim is in addition to the line. It has extra breadth and thickness in the tread. In addition, a new motorcycle tire is featured. This has a fastening arrangement of the clincher type, not the usual G. & J. clincher however, and is made with both non-skid and plain treads. A line of heavy truck tires are also shown, these being of the double side-wire fastening type, the twin tires having four wires.

**Motz Clincher Tire and Rubber Company, Akron, O.**—Besides showing the regular line of cushion and truck tires, this exhibit has two new tires. One is known as the special Long-Distance Electric and the other the Motor Buggy tire. The special long-distance electric is made on the order of the cushion tires except that the concave tread is cut deeper and the tread is scalloped in order to increase traction and eliminate skidding. The openings on the sides of the tire are made more than twice as large as formerly, thus allowing a greater range of flexibility and increased resilience. The motor buggy tire is of a clincher type. The tire is held in the rim by steel cross-bars placed slantwise in the

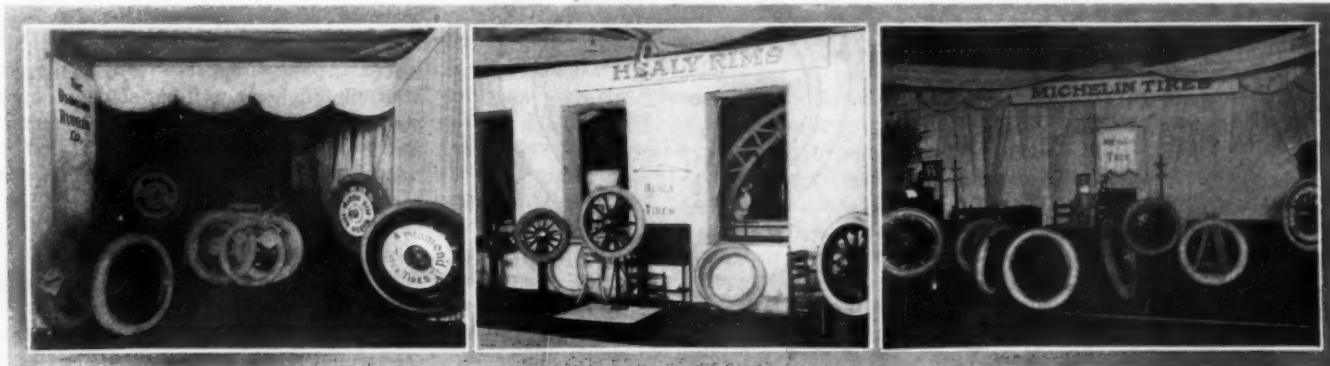
base of the tire, the ends of the bars extending under the flanges of the rim. One of the great features of the tire is that it can be applied by anyone, and should any portion of the tire become injured, the injured part can be cut out and a new piece put in without disturbing the rest of the tire.

**Pennsylvania Rubber Company, Jeannette, Pa.**—This concern features its non-skid tires for winter or rough use and produces figures to prove these more economical than plain tires, these figures having been deduced from actual practice. These are a steel studded tire with a leather tread, in which the studs are imbedded. The studs are of case-hardened steel and are set in a special process leather strip which encircles the tire. This tough leather not only serves to hold the studs securely in place, preventing their being torn from the tread, but it also protects the tire and renders it practically puncture proof. In opposition to usual practice this company recommends that at

**Samson Leather Tire Company, New York City.**—This is the well-known leather tire protector which may be applied to any tire. It consists of a leather tire cover, having an extra leather tread, to which steel non-skidding studs are attached, and an additional leather strip to be placed between the protectors and the tire to protect the latter from the ends of the rivets. This strip and the cover should be vulcanized on the tire to get the best results.

**Swinehart Clincher Tire and Rubber Company, Akron, O.**—Featured at this stand is the Swinehart rim attachment which permits of the fitting of Swinehart cushion tires without disturbing the original rim equipment or changing the road appearance of the car. It is possible, with this attachment, to use one or more cushion tires in connection with the pneumatics on the same car. In making the attachment, eight bolts come into play, which are placed on top of the rim and on the wheel,

**Auto Improvement Company, New York City.**—This concern exhibited a new demountable rim in which the clincher rim on the tire can be utilized in the demountable. On the wheel felloe is attached a thick metal rim with four cross-slots cut in it, each approximately one-quarter inch deep, and varying from one and one-half inch wide at the inner side of the rim to nearly two inches at the outer side. Into each of these slots fits a cross steel piece, formed clincher style, and riveted to the inner side of the clincher rim carrying the tire. In one side of this is a semi-circular recess, into which a locking cam carried in the wheel felloe enters. This cam is mounted eccentrically on the outer end of a radial bolt passing through the wheel felloe, and which can be locked in position by the nut on the inner end of the bolt. In removing the rim the four cams have to be oscillated back out of the recesses in the clincher rim cross pieces, after which the rim can be pulled off.



least one front wheel be equipped with non-skids besides both the rears, particularly if the car is used on city streets with asphalt pavement.

**Pneu l'Electric Company, New York City.**—This firm exhibits a full line of electric pneumatic tires, which are made in all of the standard metric sizes with either plain or other treads, as desired. In this age of specialization it is not strange to find a company thus making tires for one special branch of the industry. At any rate, the purchaser is assured of a product especially adapted to the work it has to do.

**Republic Rubber Co., New York City.**—One of the big interests for the people who attend seem to be the various non-skid devices. The Republic Company shows one that draws the crowd all right in the Staggard tread. This is a series of elongated projections, about two inches long and a half inch interval between. Six rows of these encircled the tread of the tire. Casings in this style may be had from 28 by 3 to 36 by 5, and in metric sizes from 910 by 90 to 935 by 135. In addition, the flat tread corrugated and plain clincher types are shown, the former having about seven small corrugations in the smaller sizes, and only two deep grooves in the 4½ and 5 sizes.

after which the tire rims are thrown into position. The bolts are then easily slipped around in proper position and tightened with a wrench, which securely clamps the rim and tire to the wheel. This attachment permits of it being utilized as a spare wheel.

A full line of these solid tires is shown in the sizes varying from the smallest and lightest adapted to delivery wagons and similar cars up to the big heavy twin tires for the heaviest loads, one ten-ton truck photograph being displayed. These latter are called demountable and detachable, because of the construction of the rims, which allow both features, the average time for demounting being less than twenty minutes.

#### TIRE ACCESSORIES.

**Allen Auto Specialty Company, New York City.**—At this exhibit is displayed a line of tire holders and tire covers. The latter are of fabric and completely encircle the spare tire carried, while the former are metal tire iron for fastening these covers with the enclosed tire to the car. The tire holders are made large enough for tires with demountable rims, spare wheels, or anything in the wheel or tire line, either with or without attached rims.

**Auto Tire Inflating Company, New York City.**—A feature of this inflating bottle for tires is the regulating valve in which a brass cup with an end of hard rubber guards the small exit for the inflating gas. This cap or valve is held seated through a stiff steel coil spring, on top of which is a small cap, on which bears the controlling screw. The use of a hard rubber valve and a spring medium between the valve and adjusting screw is to avoid destruction of the valve seat, and to eliminate any cringing that might otherwise occur.

**Brown Company, Syracuse, N. Y.**—In these days when the average motorist realizes the importance of keeping his tires pumped hard the necessity for having a positive method of accurately determining the pounds inflation is apparent. Figuring this way, the Brown Company is introducing for the first time a tire pressure indicator which is simple in operation. To determine the tire pressure this device is screwed on the valve stem of the tire and by the contact of the valve plunger with a similar device in the post of the indicator the air is allowed to pass into the gauge. At the same time, the pump can be applied to the other end of the indicator, and every pound forced into this registers itself on the gauge.

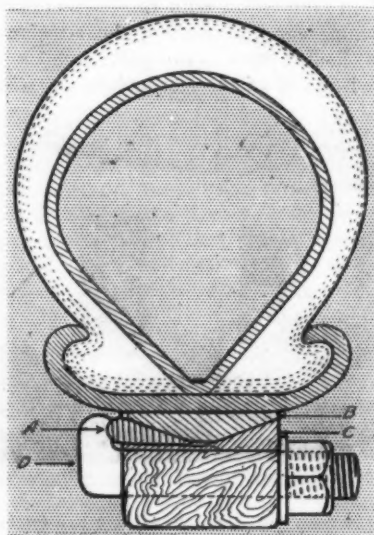
**Garage Equipment Co., Milwaukee, Wis.**—In the way of anti-skid devices, the Garage Equipment Co. calls attention to its emergency mud hooks, which are made in two styles, one for pneumatics and the other for solids. These mud hooks, as the name indicates, are for use on roads where the mud is deep or there is lots of sand. One hook goes on each wheel, and there is a projecting flange which digs into the dirt and gives it the desired traction. These hooks are made of malleable iron, weight five pounds per set, and will fit any tire from 3½ to 6 inches. Usually the projecting lug is two inches, but where the clearance between the fender and the tire is not enough to accommodate a large lug, a one-inch lug is provided. The mud hook designed for use on solid tires has a lug which projects only three-sixteenths of an inch beyond the tire. From four to six on each wheel are recommended when solid tires are used.

**Gilbert Mfg. Co., New Haven, Conn.**—One of the new Gilbert tire cases is of the buttoned or glove fastener type, with waterproofing flap, in which the glove fasteners are on the side of the case instead of on the inner face. The weather proofing flap is a semicircular flap dropping over the upper half of the joint only, the cover on the lower half overlapping as shingles on a roof and eliminating the necessity of the flap. Other new parts for this year by this company are pocket tool case to fit the hip pocket, gas tank key, single and dual tire clamps for running boards and magneto covers.

**Newmastic Tire Company, New York City.**—This firm does not make, so does not show, a tire, but rather a tire-filling compound which has been on the market for several years. An improvement has been made in the past year, however, by increasing the glue contents of this mixture to 10 per cent. and a similar increase in the glycerine, with the result that more resiliency is obtained. The compound is not as heavy as would be supposed, a 36 by 4 tire when filled weighing but 35 pounds.

**C. A. Shaler, Waupun, Wis.**—All who have had experience with pneumatic tires realize that anything which tends to keep them in good condition will prolong their life to a marked degree. One of the greatest foes of tires are the sharp stones, etc., which cut holes in the casings regardless of the quality of the tire, and make disastrous blowouts possible. The vulcanizer designed especially for autoists by C. A. Shaler is of such merit that many disagreeable moments can easily be avoided by its use. It is the work of only a few spare minutes to take a look at the tires, and by the use of this appliance heal up all wounds to the casings so effectively that it would be hard to find where the hole had been. In the matter of patches it is equally good, and the work of only fifteen minutes to put the tube in condition.

**J. H. Sager Company, Rochester, N. Y.**—This firm has been aiming at producing a demountable rim both simple and strong which can be quickly detached or attached by even the novice. The rim which is shown at the show for the first time covers these points and will undoubtedly prove a valuable asset in the matter of quick and comparatively easy tire repairs. Any ordinary clincher rim is used, and the tire with its rim is reversible; that is, it may be put on either way as the beveled surfaces (B) are the same. A band (C) having one beveled surface extending inward is shrunk and otherwise secured to the felloe of the wheel, and the only loose part is the beveled ring (A). The hook bolts do not have to be removed, but simply loosened, when they will easily turn down out of the way. The ring (A)



Section Sager Demountable Rim.

will take up any wear which might occur, and as it is split in one place, it immediately loosens up when the tension is taken off the bolt hooks, allowing the rim to slip away easily.

**Seamless Rubber Company, New Haven, Conn.**—The value of good inner tubes is not easily estimated, and having been actively engaged in the manufacture of rubber goods for nearly a third of a century, this concern enters the automobile world with a supply of inner tubes, gloves, patches, etc., in which are incorporated many ideas that have proved successful for years. The tubes are supplied for any standard make of casings.

**Standard Leather Washer Mfg. Co., Newark, N. J.**—This exhibit consists of leather tire bands of various kinds and the new Maison Gris tire pump. The tire pump is built to produce 100 pounds pressure in the tire without much labor. The Blanco band consists of a strip of rawhide tanned by a special process. It is 5-32 inch thick and is claimed to be free from grease and oil usually associated with rawhide. The Everwear tire band is a strip of four ply extra heavy woven canvas

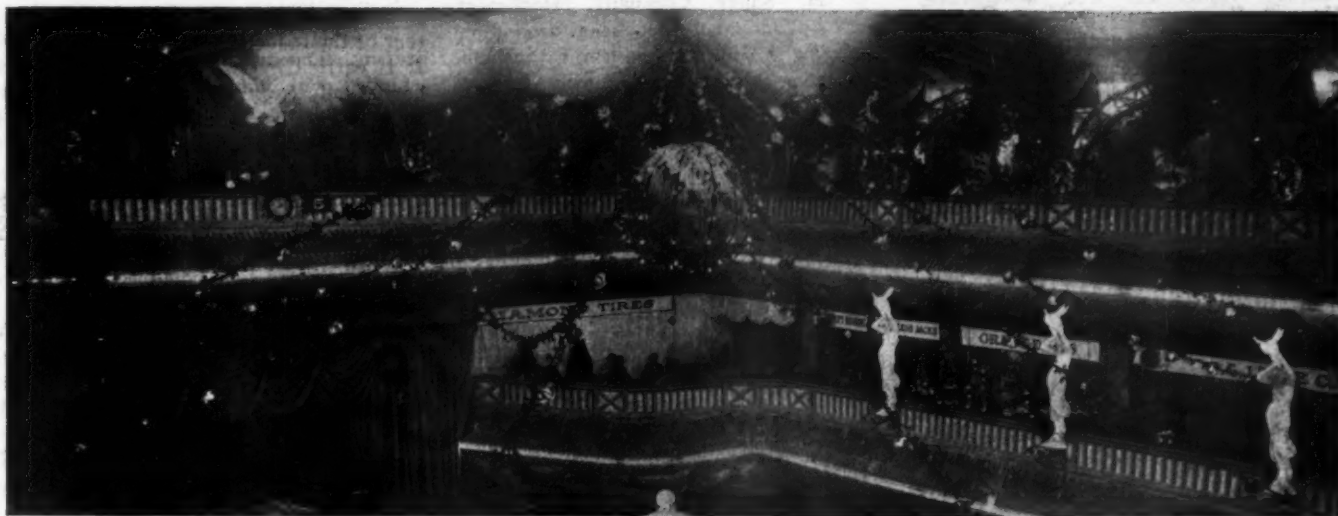
1-8 inch thick, to which is cemented with waterproof cement a layer of mechanical mineral tanned leather. The band is then studded with hard steel rivets. The finished band is 3-16 inch thick over all. The studs projecting about 1-8 inch and fitted with heavy brass eyelets and slotted to permit close adjustment to the shoe.

**Travers Blowout Patch Company, New York City.**—This is a quick repair device, consisting of a patch made of a rubber and fabric combination which fits inside the shoe of the damaged tire and has flanges on each side which fit between the tire shoe and the rim. A friction surface on the patch prevents it from creeping around out of place. This is a very neat, quickly applied, and, therefore, very useful, besides taking up small space in the tool kit.

**Weed Chain Tire Grip Co., New York City.**—The necessity for providing automobile tires with some means to prevent slipping in times of rain, ice, or snow is universally recognized, and the presence of a set of Weed chains under the seat has many times saved the day. In the cities, where asphalt becomes really dangerous after the slightest wetting, some means to prevent skidding is an absolute requirement. Weed chains do the trick, and the cost of the chains is small indeed in comparison with the cost of possible accidents, to say nothing of the fact that it is "insurance" to have Weed chains in the kit.

**The Leather Tire Goods Company, Upper Newton Falls, Mass.**, besides a full line of Woodworth adjustable treads, special and self-adjusting, show the "Kant-Skid," a series of small studded strips of leather encircling the tire and joined together around the inside and outside by a series of steel rings. These and the ends of the strips have an ingenious fastening device, which allows the removal or insertion of any strip or ring without disturbing the others. This consists of a pair of what are called "sister hooks," which are two hooks turned opposite ways and held close together by the natural spring in the steel wire. To remove or insert another ring, slip it between the two sisters and turn through 90 degrees when each hook will slip through the hole, but in opposite directions.

**York Auto Wheel Co., York, Pa.**—The device to be exhibited by this concern is styled a resilient wheel, but it comes in the demountable class. The tire inflated is fastened to an iron rim which is split and which has a turnbuckle arrangement in it. On the turnbuckle is a right and left-hand screw, by turning which the rim can be expanded enough to allow the flange on the inside of the rim to seat itself. To protect any possible weakness at this point the inventor runs a steel brace around the entire circumference of one side of the wheel. On the other there is a small section of steel which clamps into the opening where the turnbuckle is located.



## IGNITION EXHIBITS AT THE GRAND CENTRAL PALACE

By G. H. GODLEY.

ANY description of ignition accessories must of necessity begin with the magneto, for the almost universal adoption of this device is one of the noteworthy features of the show. Last year the specifications read "fitted for magneto" or "magneto extra." This year in most cases the magneto is taken for granted, and forms an integral part of the motor. However, there still remains much diversity of opinion as to the best system, and as to the desirability of an auxiliary battery. The low-tension make-and-break still holds its own on a few of the old guard, notably Premier, Gaeth and the larger Fiat models, and may receive a new lease of life from the invention of magnetic plugs, as used on the Mercedes.

Numerically the high-tension users are far in the lead. These in turn are divided between the high-tension, properly so-called, and the low-tension jump spark with separate coil. The former, in which the armature carries both primary and secondary windings, is entirely self contained and permits a simpler wiring system; usually there is but one secondary cable to each spark plug, and a primary wire to the switch. The separate coil system, on the other hand, is probably simpler in actual construction, and may more easily be fitted with an auxiliary battery, when this is

desired. In short, both types have their advantages and disadvantages, and the choice between them must in most cases rest simply on the excellence of design and workmanship. There may be seen, however, several interesting attempts to compromise between the two types, with the view of securing the best possible combination of the necessary elements.

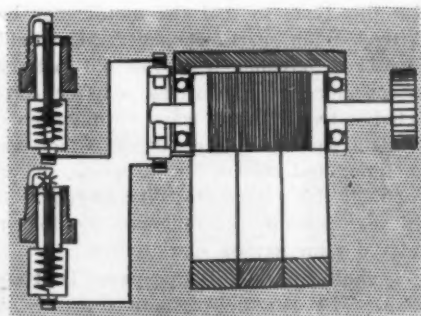
The present popularity of magneto ignition is one of the best possible proofs of the generally excellent quality of the different machines. When they were first introduced the public had little confidence in them, and they were usually regarded as adapted only to cars that could have the constant attendance of an expert electrician. A complete battery system was always demanded in addition, separate even to the spark plugs. Although some automobile manufacturers still use the two entirely separate systems, this seems only a desire to give the customer his money's worth, rather than a sign of distrust of the magneto. This increased confidence is certainly warranted by the advances made in magneto construction. Noticeable improvements are the innumerable slight changes in the arrangement of the terminals, the heavier insulation, special alloys at the contact points and stronger and more permanent magnets.

### J. S. Bretz Company, New York City.

—The U. & H. magneto shown by this company is another example of the true high-tension type. The magneto itself follows standard designs, with such refinements as the makers have found desirable; its remarkable feature is the starting device, which does away with the rapid spinning of the crank often necessary to secure a spark. When the driving pinion of the magneto is rotated at a low speed the armature and timing devices at first remain stationary, and instead the driving force is utilized to wind up a coil spring. At the desired point the spring is tripped into action, and rotates the armature through the field of the magnets with a quick jerk, thus securing the maximum spark. As the speed increases the device is thrown out of action and the drive becomes direct and constant. A more detailed description of this device, with illustrations, appeared in a recent issue of THE AUTOMOBILE.

### Bosch Magneto Company, New York City.

—This company shows a very complete line of all types, but unquestionably the feature of their exhibit is the new



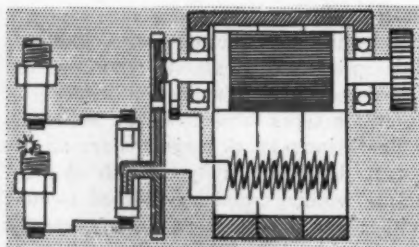
Sectional Plan Bosch Magneto.

magnetic make-and-break spark plug, on the Honold system. The magneto used with this system is a low-tension type with a primary timer sending the current to each plug in turn. The passage of the

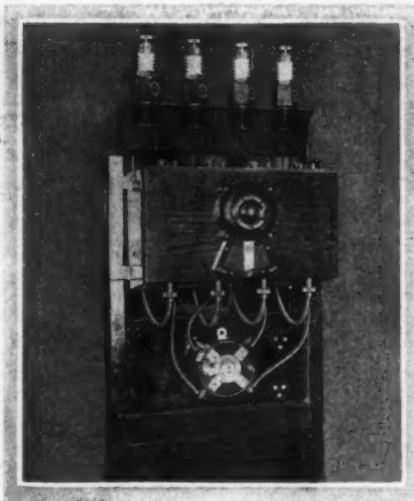
current through a small coil in the body of the plug forms a magnetic field which attracts the movable electrode of the make-and-break device, causing it to spring away from the stationary electrode and break the circuit. A hot low-tension spark immediately leaps between them. The wiring consists of a primary connection to each plug and one to the switch—not quite as simple, it is true, as the single wire and bus-bar of the usual make-and-break system; but it has the great advantage that no moving parts must pass through the cylinder wall, and there are no cams or tappets required on the motor. In addition to this specialty the exhibit comprises the standard low-tension make-and-break and high-tension types familiar to the industry. The Bosch jump spark magnetos are all of the true high-tension type, with double armature windings, and may be had to run at either camshaft or crankshaft speed. There is also shown a compact coil and switch to be used.

**Herz & Company, New York City.**—The Herz magneto, according to the makers, is an attempt to secure as close an approach as possible to ideal efficiency, and with this end in view they have embodied a number of interesting features. The magnet system consists of several flat, round steel plates clamped together to form a cylindrical body, through which is then bored the "tunnel" for the armature. There are no separate pole pieces, and thus no breaks or joints in the magnetic circuit. This idea is carried still farther by finishing the "tunnel" and the armature itself with such accuracy that they move within four one-thousandths of an inch of one another in perfect freedom. The armature carries both primary and secondary windings, with the condenser arranged in a cylindrical case on one end, and the contact-breaker, which forms a separate unit, just beyond. The single-cylinder magneto weighs but  $4\frac{1}{4}$  pounds and the four-cylinder machine 8 pounds.

**Hess-Bright Manufacturing Company, Philadelphia, Pa.**—One of the most ingenious attempts to combine the advantages of the high-tension and low-tension jump spark magnetos may be seen in the Hess-Bright machine, recently brought out by the well-known manufacturers of ball bearings. Strictly, this mageto belongs to the low-tension group, but its appearance by no means indicates this fact. The armature carries a single primary winding, but the coil, instead of being housed in a separate case on the dash, is made very small and compact and inserted in the arch of the magnets, directly above the armature. This eliminates at one stroke all external primary connections, and gives the system the neatness and compactness of the true high-tension. Another feature is the method of advancing and retarding the spark. The armature is connected to the driving shaft through a spirally grooved sleeve, which may be slid back and forth to set the armature either ahead of or behind its drive. The contact-breaker and distributor of course move with the armature. In this way a change of as much as 60 degrees may be obtained with no variation in the current induced. The condenser is unusually large, and the armature shaft runs on H-B bearings specially designed for magneto use, in which an attempt is made to afford the maximum simplicity, coupled with the longevity of the regular types of H-B ball bearings.



Section Hess-Bright Magneto.



Heinze Spark Coil Exhibit.

**Heinze Electric Company, Lowell, Mass.**—To its line of spark coils and other ignition apparatus this company has recently added a magneto. This device, unlike the majority of magnetos exhibited, makes no attempt to concentrate in itself a complete ignition system, but simply takes the place of a battery. It generates a low-tension current and operates through the usual timer and vibrating spark coils. The magneto is small and compact, being in the shape of a cylinder with the driving pinion on the axis at one end, and the terminals at the other. It sells at an unusually low price.

**Lavalette & Company, New York City.**—Prominent among the types which make use of an entirely separate coil is the Eise-mann-Lavalette, a French device which is included as standard equipment on a number of both foreign and American cars. The coil box may be mounted on either the front or rear side of the dash, according to the preference of the user. The advantage claimed for this construction is that, there being no especial limitation on the space occupied by the coil, the insulation may be made very heavy, thus minimizing the danger of a short circuit. The auxiliary battery is regularly included with this type, so that the motor may be started on the spark whenever this would have been possible with the old battery system alone. The battery may be connected in two different ways, forming more or less a separate system; it may either use the timer and coil of the magneto, or be provided with a separate coil and timer, in both cases using the magneto distributor and the same set of spark plugs.

**Pittsfield Spark Coil Company, Dalton, Mass.**—The Pittsfield magneto makes a wide departure from usual designs and is rather difficult to classify, but it seems to have more of the characteristics of the true high-tension type. The armature consists of a simple laminated inductor, with no winding whatever. What would otherwise be a double armature winding, both

primary and secondary, is placed to the rear of the inductor and remains stationary. It is carried by two steel bars projecting horizontally from the poles of the magnets, and its core is included in the magnetic circuit. This winding or coil forms a separate unit and may be easily removed upon taking off the back cover of the machine. The circuit-breaker is mounted between the armature and the stationary coil. There are four pole pieces instead of two, these being arranged in the form of a sleeve about the armature. As a result the magneto gives four impulses of current to each revolution, and must be driven at camshaft speed. This makes it possible to mount the distributor directly on the front end of the armature shaft, dispensing with the usual secondary shaft and half-time gears. Timing is effected by shifting the pole pieces.

**Remy Electric Company, Anderson, Ind.**—Remy is an adherent of the standard low-tension type with separate coil. However, an interesting change in the construction of the magneto itself may be noted. The winding of the armature is stationary and imbedded in the pole pieces of the magnets, and the rotating part or inductor is a simple forging mounted on the driving shaft. This does away with moving contacts in the primary circuit—a frequent source of trouble. It is claimed that the wave outline of the current shows a very abrupt rise and fall, with an almost flat top, permitting a considerable change in timing at the same strength of current. The auxiliary battery system which is regularly used acts through the magneto timer, coil and distributor. The coil, which is carried in a neat box on the dash, also contains the switch and a push button for starting on the spark.

**C. F. Splitdorf & Company, 1679 Broadway, New York City.**—After an unsuccessful experiment with the high-tension magneto, the Splitdorf company turned to the separate coil type, and are showing a complete line of these machines in addition to their well-known spark coils, plugs and timers. Their magneto is adapted for the use of an auxiliary battery, but this is not needed except for starting on the spark, as the magneto itself gives a sure spark at speeds as low as 40 r.p.m. To demonstrate this, their exhibit included a magneto fitted with a crank that could be turned by hand, connected to a set of spark plugs; a very slow turn of the crank was sufficient to produce vigorous sparks.

**Wheeler & Schebler, Indianapolis, Ind.**—The Wheeler & Schebler magneto is intended simply to take the place of the battery, and acts through the usual separate timer, and vibrating coils, or a single coil and distributor may be used. Its rotation need not be synchronous with that of the motor, so that it may be driven either by gear, friction or belt. The speed is about three times that of the motor. Unlike most machines of this type, it requires no gov-

error. Among the advantages claimed are the absence of wound rotators and the mounting of the shaft on annular ball bearings, the importance of which cannot be overestimated, in view of the location.

**Witherbee Igniter Company, New York City.**—The Volta magneto marketed by this company belongs to the high-tension type and is entirely self-contained. The armature is of the standard H-section,

of gray iron, and revolves between two pole pieces of the same metal attached to the magnets. The windings are carefully arranged and insulated to prevent short-circuiting, which is an important matter.

## THOSE WHO WERE EXHIBITING BATTERIES

**T**HE sudden wave of popularity of the magneto does not appear to have injured the business of the battery makers to any extent, but rather has stimulated them to make every possible improvement and secure every advantage which the battery possesses over its rival. In numbers the storage battery has the advantage, but the dry cell has received a considerable

impulse through recent improvements in timer and coil construction, reducing the consumption of current. Most of the storage batteries exhibited show that the maker has taken unusual care to prevent creeping of the electrolyte and corrosion of the terminals, with the gratifying result that this branch of the ignition field will be better taken care of than ever.

**Electric Storage Battery Company, Philadelphia, Pa.**—This company's "Exide" storage battery for ignition purposes was first placed on the market in 1903, and is thus one of the pioneers in this line. Improvements for 1909 include a new terminal post designed to prevent creeping of the electrolyte, the reinforcement of the plates at the points where they rest on the ribs at the bottom of the jars, and the thickening of the separators. But perhaps the most welcome innovation will be the "duplex" model, which contains, in addition to the three standard cells, three small ones to act as a reserve. The principle is like that of the reserve supply gasoline tank. The additional cells increase the size of the battery case but little, and have a capacity of about five amperes, amply enough in case of accident to take the car to the nearest charging station.

**Federal Manufacturing Company, Lowell, Mass.**—One of the features of the Rex storage battery manufactured by this company is the "triple armored" casing, which consists of a quartered oak box on the outside, next a lining of shock-absorbing, acid-proof material and finally the hard rubber jar, the whole cemented together. No brass or iron screws or bolts are used, so that there is nothing to be corroded by the acid. Each cell is enclosed by an individual cover.

**Geiszler Brothers, New York City.**—The Geiszler product is known as the "non-sulphating" storage battery, as the makers claim that by a special chemical treatment of the active material this trouble is absolutely precluded. No injury results from leaving the batteries discharged or without recharging for any length of time. The separate compartments are sealed by an inner hard rubber cover and a thick layer of cement, insuring both acid and watertight construction. Corrosion has been eliminated by silver-plating the screws of the terminal binding posts.

**General Storage Battery Company, Boonton, N. J.**—It is claimed that the grids of the Bijur storage battery, manufactured by this concern, are 40 per cent. lead and 60 per cent. active material. The positives are made twice as thick as the negatives, and the mud space is of double the usual capacity. The battery is fitted with a master cover which conceals all the metal parts, leaving none exposed.

**Marko Storage Battery Company, Brooklyn, N. Y.**—The grids of the Marko batteries are treated by a special process which is claimed to prevent shedding and disintegration; they are also made extra strong to avoid buckling. The battery is provided with a master cover which conceals all interior connections, only the main terminals and the vents projecting.

**National Battery Company, Buffalo, N. Y.**—Although most of this company's product consists of large batteries for electric vehicles, they have brought out a specially designed battery of suitable size and construction for ignition purposes. The positive grids are strengthened by solid vertical and horizontal cross-bars; the negatives are designed to allow for shrinkage, so that when this takes place the active material is drawn more closely around the projections on its surface, with the extensive experience gained in storage battery work.

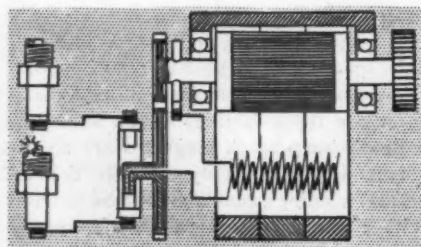
**Westchester Appliance Company, New York City.**—The dry batteries manufactured by this concern are especially designed for automobile ignition. Long life and great recuperative power are obtained by the use of only the best materials. The electrolyte is so balanced that there is no possibility of short circuit or polarization.

**Witherbee Ignitor Company, New York City.**—This company exhibits its well known storage batteries with the "busy bee" trade mark. The former models are retained practically without change, but a new "Witherbee Jr." battery has also been brought out in response to the demand for a high-class battery at a lower price. The wood case is in bog oak and the metal parts are finished in black acid-proof lacquer.

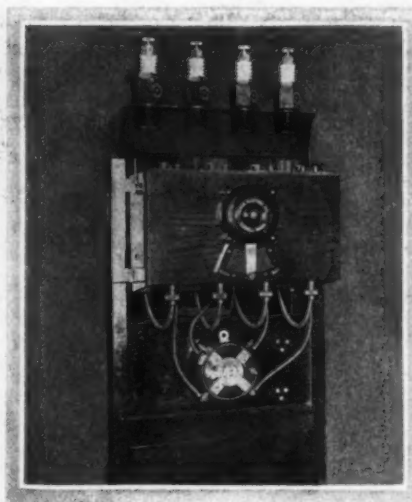


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primary and secondary, is placed to the rear of the inductor and remains stationary. It is carried by two steel bars projecting horizontally from the poles of the magnets, and its core is included in the magnetic circuit. This winding or coil forms a separate unit and may be easily removed upon taking off the back cover of the machine. The circuit-breaker is mounted between the armature and the stationary coil. There are four pole pieces instead of two, these being arranged in the form of a sleeve about the armature. As a result the magneto gives four impulses of current to each revolution, and must be driven at camshaft speed. This makes it possible to mount the distributor directly on the front end of the armature shaft, dispensing with the usual secondary shaft and half-time gears. Timing is effected by shifting the pole pieces.

**Remy Electric Company, Anderson, Ind.**—Remy is an adherent of the standard low-tension type with separate coil. However, an interesting change in the construction of the magneto itself may be noted. The winding of the armature is stationary and imbedded in the pole pieces of the magnets, and the rotating part or inductor is a simple forging mounted on the driving shaft. This does away with moving contacts in the primary circuit—a frequent source of trouble. It is claimed that the wave outline of the current shows a very abrupt rise and fall, with an almost flat top, permitting a considerable change in timing at the same strength of current. The auxiliary battery system which is regularly used acts through the magneto timer, coil and distributor. The coil, which is carried in a neat box on the dash, also contains the switch and a push button for starting on the spark.

**C. F. Splitdorf & Company, 1679 Broadway, New York City.**—After an unsuccessful experiment with the high-tension magneto, the Splitdorf company turned to the separate coil type, and are showing a complete line of these machines in addition to their well-known spark coils, plugs and timers. Their magneto is adapted for the use of an auxiliary battery, but this is not needed except for starting on the spark, as the magneto itself gives a sure spark at speeds as low as 40 r.p.m. To demonstrate this, their exhibit included a magneto fitted with a crank that could be turned by hand, connected to a set of spark plugs; a very slow turn of the crank was sufficient to produce vigorous sparks.

**Wheeler & Schebler, Indianapolis, Ind.**—The Wheeler & Schebler magneto is intended simply to take the place of the battery, and acts through the usual separate timer, and vibrating coils, or a single coil and distributor may be used. Its rotation need not be synchronous with that of the motor, so that it may be driven either by gear, friction or belt. The speed is about three times that of the motor. Unlike most machines of this type, it requires no gov-

ernor. Among the advantages claimed are the absence of wound rotators and the mounting of the shaft on annular ball bearings, the importance of which cannot be overestimated, in view of the location.

**Witherbee Igniter Company, New York City.**—The Volta magneto marketed by this company belongs to the high-tension type and is entirely self-contained. The armature is of the standard H-section,

of gray iron, and revolves between two pole pieces of the same metal attached to the magnets. The windings are carefully arranged and insulated to prevent short-circuiting, which is an important matter.

## THOSE WHO WERE EXHIBITING BATTERIES

**T**HE sudden wave of popularity of the magneto does not appear to have injured the business of the battery makers to any extent, but rather has stimulated them to make every possible improvement and secure every advantage which the battery possesses over its rival. In numbers the storage battery has the advantage, but the dry cell has received a considerable

impulse through recent improvements in timer and coil construction, reducing the consumption of current. Most of the storage batteries exhibited show that the maker has taken unusual care to prevent creeping of the electrolyte and corrosion of the terminals, with the gratifying result that this branch of the ignition field will be better taken care of than ever.

**Electric Storage Battery Company, Philadelphia, Pa.**—This company's "Exide" storage battery for ignition purposes was first placed on the market in 1903, and is thus one of the pioneers in this line. Improvements for 1909 include a new terminal post designed to prevent creeping of the electrolyte, the reinforcement of the plates at the points where they rest on the ribs at the bottom of the jars, and the thickening of the separators. But perhaps the most welcome innovation will be the "duplex" model, which contains, in addition to the three standard cells, three small ones to act as a reserve. The principle is like that of the reserve supply gasoline tank. The additional cells increase the size of the battery case but little, and have a capacity of about five amperes, amply enough in case of accident to take the car to the nearest charging station.

**Federal Manufacturing Company, Lowell, Mass.**—One of the features of the Rex storage battery manufactured by this company is the "triple armored" casing, which consists of a quartered oak box on the outside, next a lining of shock-absorbing, acid-proof material and finally the hard rubber jar, the whole cemented together. No brass or iron screws or bolts are used, so that there is nothing to be corroded by the acid. Each cell is enclosed by an individual cover.

**Geiszler Brothers, New York City.**—The Geiszler product is known as the "non-sulphating" storage battery, as the makers claim that by a special chemical treatment of the active material this trouble is absolutely precluded. No injury results from leaving the batteries discharged or without recharging for any length of time. The separate compartments are sealed by an inner hard rubber cover and a thick layer of cement, insuring both acid and watertight construction. Corrosion has been eliminated by silver-plating the screws of the terminal binding posts.

**General Storage Battery Company, Boonton, N. J.**—It is claimed that the grids of the Bijur storage battery, manufactured by this concern, are 40 per cent. lead and 60 per cent. active material. The positives are made twice as thick as the negatives, and the mud space is of double the usual capacity. The battery is fitted with a master cover which conceals all the metal parts, leaving none exposed.

**Marko Storage Battery Company, Brooklyn, N. Y.**—The grids of the Marko batteries are treated by a special process which is claimed to prevent shedding and disintegration; they are also made extra strong to avoid buckling. The battery is provided with a master cover which conceals all interior connections, only the main terminals and the vents projecting.

**National Battery Company, Buffalo, N. Y.**—Although most of this company's product consists of large batteries for electric vehicles, they have brought out a specially designed battery of suitable size and construction for ignition purposes. The positive grids are strengthened by solid vertical and horizontal cross-bars; the negatives are designed to allow for shrinkage, so that when this takes place the active material is drawn more closely around the projections on its surface, with the extensive experience gained in storage battery work.

**Westchester Appliance Company, New York City.**—The dry batteries manufactured by this concern are especially designed for automobile ignition. Long life and great recuperative power are obtained by the use of only the best materials. The electrolyte is so balanced that there is no possibility of short circuit or polarization.

**Witherbee Igniter Company, New York City.**—This company exhibits its well known storage batteries with the "busy bee" trade mark. The former models are retained practically without change, but a new "Witherbee Jr." battery has also been brought out in response to the demand for a high-class battery at a lower price. The wood case is in bog oak and the metal parts are finished in black acid-proof lacquer.



## IN THE LINE OF TIMERS AND COILS.

AS nearly all companies that make timers or coils make both, these two components naturally group themselves together. The coil makers have often said that they were forced to make timers in self-protection, on account of the uneconomical operation of the original designs. Whatever truth there may be in this assertion, it is undoubtedly to the advantage of the industry that the same company should manufacture all the necessary accessories in any given line, so that these may be designed to act in harmony with each other and form a homogeneous sys-

tem. The most noticeable improvement in timer construction is in the greater solidity and stability of the new devices. Ball bearings are used in many cases, and a firm support is always provided. In the line of coils, the unit construction is now universal, although this may be changed by the recent announcement of a basic patent on this design. This is a question that cannot be settled with any degree of certainty until the attitude of the makers is known. As to what they will do, and when, is a matter that will have to bide its time.

**Atwater-Kent Manufacturing Works, Philadelphia, Pa.**—The Atwater-Kent "spark generator" is unique in that it combines in itself timer, coil and distributor. It is one of the few devices operated exclusively by battery current that seem to be able to resist the advance of the magneto. The design is such as to obtain the highest possible efficiency and economy in current consumption, so that the ignition of a four-cylinder car may be effected by a single set of dry batteries. But one spark is produced for the ignition of each cylinder, and the duration of the contact is as short as possible. In this way it is claimed that a mileage of 1,500 to 2,000 miles can be obtained on six dry cells.

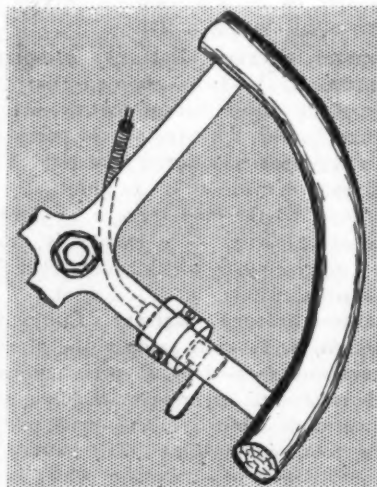
**The Autocoil Company, Jersey City, N. J.**—The Autocoil Company shows their new battery-saving timer, which is claimed to double the life of a set of batteries. The length of contact usually found necessary to insure firing under all conditions is about 45 degrees, and most timers are designed on this basis. For ordinary touring, however, this company believes that 15 degrees of contact is sufficient. Accordingly the Autocoil timers are made for 15 degrees contact in normal position, but by means of a foot lever the contact can be increased to 45 degrees for high-speed work. This end is attained by the use of a second set of contact plungers—a feature which in itself would secure additional certainty of firing. Autocoil spark coils are listed in the usual models, with or without kick switch and ammeter.

**Connecticut Telephone and Electric Company, Meriden, Conn.**—This company exhibits its standard line of coils, for which great economy of current consumption is claimed. It has also brought out a timer, of the roller type, in which the shaft runs on a double row of balls, one on each side of the roller arm. Special swivelling connections are fitted. Another addition to the line is a high-tension distributor and a coil specially designed for use in connection with it.

**Federal Manufacturing Company, Lowell, Mass.**—The feature of the Federal spark coils is the "torsional" vibrator, which, it is said, enables the coil to work on one-tenth of an ampere. The vibrator points are of iridio-platinum, much harder than pure platinum. The unit coil cases are of hard rubber instead of wood, so

that they cannot swell or warp and are practically indestructible. The secondary coils are wound in layers with insulation between each layer, obviating any possibility of leakage. The vibrator cannot be thrown out of its working range by any possible misadjustment.

**Heinze Electric Company, Lowell, Mass.**—The standard models of Heinze coils may be seen at this exhibit, and also the latest type of timer. This has a wipe contact, secured by a steel arm passing over the upper surface of a fiber disk, from which project the heads of hardened steel



Connecticut Steering Wheel Switch.

screws connected to the binding posts. Their coil is provided with a new type of kick switch, actuated by a projecting lever of sufficient size to be easily thrown over by the driver's foot.

**Herz & Company, New York City.**—This company holds the agency for two well-known French coils, the Gianoli and the Guenet. They still make the familiar snap-off and "tangent" timers and their high-tension distributor, in which all contacts are between hardened tool steel, with shafts running on ball bearings. The distributor is provided with swivelling ball-joint terminals for all high-tension wires.

**Kokomo Electric Company, Kokomo, Ind.**—The Kokomo Electric Company manufactures the Kingston line of ignition specialties, among which is a new coil with the terminals on the back side. The terminal posts are extended sufficiently to be

flush with the front side of the dash. In this position they are unaffected by dirt or moisture, and a considerable amount of cable is saved. The company also makes a neat and compact roller-contact timer.

**Monitor Manufacturing Company, Boston, Mass.**—Bemus timers and Monitor distributors are shown at this exhibit. The former device retains its ball contact pieces, but for the ball center contact of former models a conical roller has been substituted. As this roller touches in turn the outer ball contacts, these are rotated in all directions, and whatever wear may take place is thus equalized. A special ground connection from the roller is provided, so that the current does not have to pass through a bearing of more or less resistance. The shaft, of course, runs on ball bearings.

**National Coil Company, Lansing, Mich.**—After a considerable period of experimenting this company has perfected a master vibrator system for multi-cylinder motors, which is said to be very simple in its adjustments and connections, and to greatly improve the running of the motor. The system consists of a single vibrator mounted on the dash, and a transforming coil for each cylinder made in unit form, preferably located near the cylinders. In all coils the insulating is of the highest grade, no paraffine being used, and the condenser capacity is very large.

**Witherbee Igniter Company, New York City.**—Another member of the very complete "Wico" line of ignition specialties is the spark coil. This has been designed especially to conform with the batteries, timers and plugs of this company. The timer is of the roller type, but instead of the roller touching the contacts directly, it runs in a loose steel ring. The contacts are of tool steel and project slightly, but recede as the ring passes over them. Thus a smooth path is provided for the roller, and the timer operates at all speeds without noise or wear.

### PLUGS, SWITCHES, SUPPLIES.

**Bosch Magneto Company, New York City.**—This company has brought out a spark plug especially designed to work with their magneto. It can be provided with one, two or four electrodes, according to the work for which it is to be used.

**J. H. Bunnell & Co., New York City.**—There are always times when the dry cell proves its value as an emergency standby, and while it has been supplanted to a considerable extent by other forms of ignition, the number of cars which still use dry cells as their regular equipment for this essential is large, and, strange as it may seem, is increasing rather than diminishing, due to improved forms of timers and coils, which do not waste such a great proportion of the current. This company markets a dry cell that has been especially developed for auto use, and manufactures it in a square form, which increases the capacity of the cell without requiring additional room, and also facilitates carrying it, as it is proof against rattling round in the battery box.

**Connecticut Telephone and Electric Company, Meriden, Conn.**—One of the neatest little devices at the show is this company's new steering wheel switch. The switch contacts are contained in a compact box about 1 1/2 inches in diameter and 1 inch thick, which is clamped to the under side of one of the spokes of the steering wheel. It is operated by a lever arm which projects in such a way that the driver can reach it with his thumb without taking his hand from the wheel. The connections are carried through a flexible metal tube running down the steering column.

**Herz & Company, New York City.**—The "Bougie Mercedes" plugs of this company are familiar to all automobile users. They are still made with their double insulation of unbreakable stone, and are especially recommended for use with high-tension magnetos. The Herz foot switch and a complete line of terminals of all varieties are also shown.

**Kokomo Electric Company, Kokomo, Ind.**—The insulation of the Kingston plug shown by this company is built up of mica with a special fireproof cement under high pressure and then baked. They are made in 1-2-inch standard and A. L. A. M. sizes only.

**C. A. Mezger, New York City.**—The Mezger soot-proof spark plug has a deep annular space between the body of the plug and the insulation, and between the insulation and the central electrode. In this way an extremely long insulating surface is formed.

**A. R. Mosler & Company, New York City.**—The distinguishing feature of the Mosler plugs is the deep chamber in the base, which on the compression stroke is filled with the mixture. When the spark comes, this mixture is fired first, and rushes out through the narrow opening of the chamber with considerable force, so that the plug may be said to "spit fire." There is also exhibited at this stand a signal

called the "1st," to be carried on the tail lamp for night driving. By means of a lever on the steering column the driver can cause the signals "slow" and "stop" to appear for the benefit of any vehicle behind him.

**National Coil Company, Detroit, Mich.**—This exhibit includes a plug made for use with the National coils, which is distinguished by its four sparking points. These consist of triangular extensions of the body of the plug bent inward toward the central electrode.

**Stanley & Patterson, New York City.**—This concern shows battery boxes made to hold various numbers and combinations of dry cells, the feature of which is that all connections are made automatically by the mere insertion of the cell into a socket in the box. All the boxes are strictly waterproof.

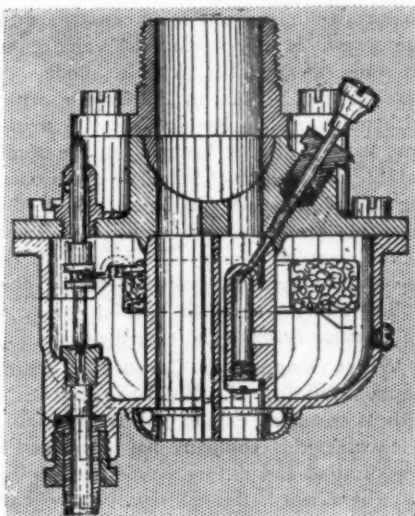
**Witherbee Igniter Co., New York City.**—The Wico spark plug is distinguished by its micrometer adjustment, by means of which the distance between the central electrode and the sparking points—here five in number—may be regulated to the thousandths of an inch. Another plug is also shown without this feature, at a somewhat lower price. The adjustable spark plug should find favor at the hands of autoists, in view of the ease with which it may be adjusted.

## IN THE IMPORTANT FIELD OF THE CARBURETER

**Albert E. Otto, New York City.**—A novelty was shown in the imported Economy carbureter, manufactured by Adolf Saurer, of Switzerland, which has two spraying nozzles located side by side, the tip of one extending into a strangling tube of one diameter and the other extending into a tube of much larger diameter. The larger tube is normally closed at its upper end by a hinged flap valve held closed by dashpot and spring contrivance outside of the carbureter casing, so that until the suction of the motor reaches a certain limit, all of the mixture used passes by way of the small strangling tube, but above that the flap door opens and both tubes and both nozzles furnish the supply. In other respects the carbureter is a conventional construction.

**Allen Fire Department Supply Company, Providence.**—This concern showed a two-port carbureter, the leading characteristic of which is that the vertical central air opening within the ring float is divided into halves by a vertical partition, and the spraying nozzle is located in one of the passages, and the other serves solely as an air entrance. The top of each passage is guarded by a sliding horizontal throttle having a circular opening equal in diameter to the combined area of the mixture and air passages. In this throttle also is an adjustable minimum air opening which

prevents, if desired, shutting the motor off entirely when the normal throttle opening is completely closed. The needle valve regulating the gasoline entrance is oper-

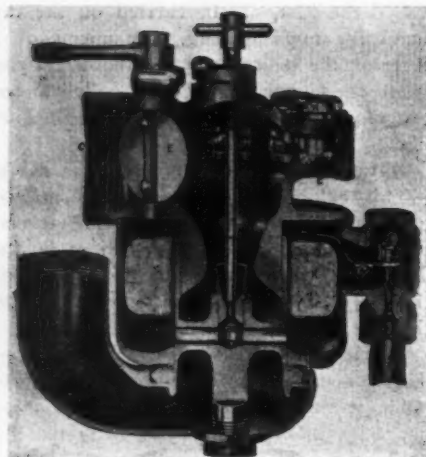


Allen Two-Port Carbureter.

ated by lever from the float. The only two adjustable parts about the carbureter are the minimum air passage controlled by screw and the needle valve in the spraying nozzle. Trouble of any sort is aborted by absence of loose parts.

**F. E. Bowers Company, New Haven, Conn.**—The Bowers concentric-float carbureter has been improved by the addition of a peculiar type of auxiliary air valve in the form of three openings each guarded by a leaf spring, the suction having to overcome these springs before additional air enters. The air for these openings is taken through ports in the sides of an expansion of the mixing chamber, whereas the main air passage is a vertical one past the nozzle.

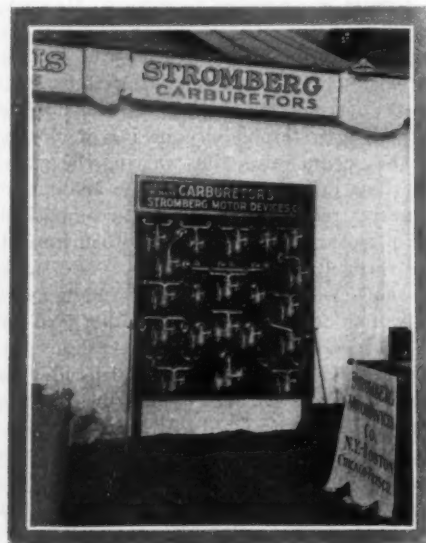
**Breeze Carbureter Company, Newark, N. J.**—The improvement in the Breeze carbureter is the control of the needle valve in the spraying nozzle, whereby with every opening or closing of the throttle there is a corresponding opening or closing of the needle valve, thus varying the gasoline flow in proportion with the amount of mixture required. This is accomplished by a cross track placed as a diameter of the vertical cylindrical throttle. The track is supported at one end by a high-speed adjusting button, and at the other end by a low-speed adjusting button. On the needle valve stem is a wheel which rides on this track and through which the throttle changes are transmitted to the needle valve. By means of the external high and low-speed adjusting buttons all carbureter adjustments can be quickly made from the outside.



Section View Kingston Carbureter.

**Byrne, Kingston & Company, Kokomo, Ind.**—The new Kingston carburetor differs from previous types, in that the auxiliary air valve takes the form of five air openings, each guarded by a metal ball which must be lifted from the seating in the air port before air enters. The five balls are all of the same diameter and weight, and are distributed in semi-circular form in the floor of the mixing chamber extension. The air entering by way of these ball-guarded ports does not pass the spraying nozzle, in which is an adjustable needle valve. This carburetor is made with the main air entrance in the form of a vertical passage within the ring float.

**Stromberg Motor Devices Company, Chicago.**—In addition to its regular 1908 carburetor, the Stromberg company exhibited its new concentric-float type, designed for air-cooled and small motor work. This carburetor uses the glass float chamber and the nozzle without a needle valve. A new principle in it is the method of raising or lowering the float level. The float is supported on the long end of a horizontal lever, with the needle valve regulating the gasoline entrance on the short arm. Ordinarily the float end of the lever



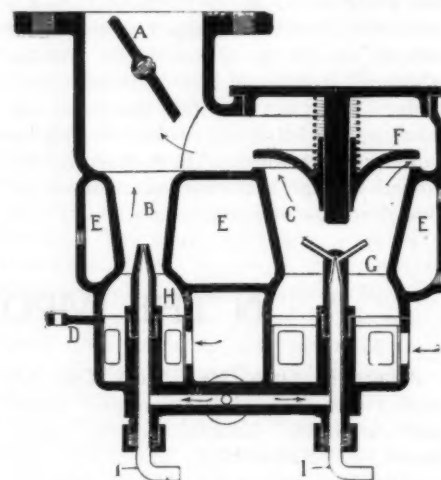
is down, but additional pressure can be placed on the needle valve end by changing the tension of a coil spring surrounding the needle valve. Increasing the spring tension makes the float easier to lift, and, consequently, the gasoline level in the float chamber is lowered, whereas lessening the tension makes the float harder to lift and raises the gasoline level. The spring is adjusted from an external lock nutting device. A retained feature in this carburetor is the double spring control of the auxiliary air valve, one of the springs coming into use immediately the valve begins opening, and termed the slow-speed spring, and the other coming into action only on further opening of the valve, and styled the high-speed spring. External means are provided for adjusting each spring from the outside.

**Wheeler & Schebler, Indianapolis.**—The feature of one new Schebler model is the control of the gasoline supply past the needle valve in the nozzle by the auxiliary air valve. This is accomplished by a linkage connected with the valve, which connects with a rocking piece carrying the needle valve. A flat adjusting spring determines the amount of lift given the needle, and acting behind this spring are two screws which change the spring contour, one changing it towards one end to give greater gasoline feed at low speeds, and the other acting at the other end to vary the feed on high speeds. By varying these two screws any desired mixture can be had. In order to prevent injuring the needle valve point by screwing it too tightly on its seating, the stem is made with a ball on its upper end resting in a socket holder to permit of universal movement, and behind the ball a spring is interposed between it and the adjusting screw, which spring compresses under too much movement of the screw, thereby saving the valve point. In some of the other Schebler models the gasoline is controlled by the throttle, which with more or less opening there is a proportionate raising or lowering of the needle valve. The amount of lift for a given opening of the throttle can be varied by two adjusting screws, and in addition to which is the regular screw adjustment of the valve. The auxiliary valve is spring controlled, and the main air opening is a central passage through the ring float.

**Willet Engine & Carburetor Company, Buffalo, N. Y.**—In connection with its two-cycle engine with rotary crankcase valve, this company has developed a new original and different type of carburetor. In a word, this consists of two carburetors in one, each with its own spray nozzle and adjustment.

This carburetor is of the double automatic type, using a small carburetor on the low speeds, and a second, cutting in automatically, for intermediate and high speeds. Each carburetor is adjusted by an individual needle valve, and both carburetors are entirely surrounded by a hot water jacket.

There is a throttle (marked "D" on the half-section drawing) which, when closed up, creates a strong vacuum on the spray nozzle, thus drawing a rich mixture to make easy starting possible. The valve is then opened to its normal position, which is wide open. Should the weather be cold and a richer mixture required, this valve may be closed somewhat. This may be done from the dash, while the car is running, without disturbing the needle valves; thus it is possible to change the mixture in the carburetor without disturbing the needle valve adjustment. Perfect mixture is obtained by this carburetor from very low speeds to extremely high speeds owing to the independent adjustments. The automatic valved (marked "F") has a slight spring tension back of it. This valve cuts in the second carburetor whenever necessary. The entire carburetor is controlled by a butterfly throttle valve (marked "A"). Ports in the intake chamber are lined with a fine mesh brass screen, which keeps all dirt



Details of the Willet Carburetor.

from entering. A strainer is also fitted in the coupling underneath the float chamber, which keeps dirt from getting into the float chamber through the gasoline intake pipe. Float is of weighted cork, suspending a ball valve on bottom of carburetor.

The needle valves (marked "H & G") can be readily removed for inspection, and replaced without losing their adjustment. A singular jet is used on the low speed in the small carburetor, and a series of four jets, controlled by one needle valve, is used on the second carburetor (or the one marked "C").

#### GASOLINE INDICATOR.

**Randall-Faichney Company, Boston, Mass.**—This company is handling the product of the Webster Mfg. Company, which consists of a gasoline indicator. In substance this is exceedingly simple, a float at the end of a metal arm turning one of a pair of gears, the other being on the bottom of the spindle, which carries the indicator hand, turns with it, thus indicating the amount of gasoline left in the tank.



## MATERIALS USED IN AUTOMOBILES AND ACCESSORIES

STRIPPING the whole question of the glittering generalities that follow in the wake of the enthusiasts who cluster around the automobiles at the show from morning until the orchestra sounds the "retreat," taking into account a previous detailed knowledge of the practices and the incentives—even allowing that some of the things can be improved—it is possible to detail a story of the use of good materials and to show that they are available for service.

When a builder of automobiles says good materials are used, that die forgings are in the axles, that forgings are made in one piece—no welds—that the dynamic ability of the parts that have to sustain under severe conditions of shock service is adequate, than it is time to look for the evidences of ability and the question is, Where did the quality grow?

If good materials are to be had, they must be on the surface, in plain sight; few, indeed, are the men who hide their light under a bushel. Look around the show, see the exhibitions of accessories, note the display of materials of every kind. The evolution of a half-score of years hangs to the show like a specter, steeped in the persistence which, like time, is dyed in the wool. Go down the line and every foot of the way will be contested by things that compel attention. View the whole situation with a critical eye and what will be the result?

The automobile industry is out of its knickerbockers, and it has conducted a "Cook's tour" of accessories along with it; it may be the conductor, but it is only one swallow; the accessories are as the rest of the flock. Along with the accessories will be found the "parts." Makers of automobiles use parts, and they get them—in the majority of cases—from the parts makers. The claim is frequently made that an automobile is not so good because parts are used, parts that are made outside of the assembling shop. Is a Waltham watch bad because the case is made in another shop?

All shops are divided into departments, and each department is under the guidance of separate men. Does the fact that the same "board of directors" controls the several departments ac-

count for the good work in them? The board of directors merely authorize the work. They do none of it. The same conclusion is that in which allowance can be made for good work in any shop, and if the products are all as per drawing, and the materials are all good, the sum will be a good automobile, watch, or whatnot. But if a company does not pay the price that will command good things, it is as sure as shooting they will not be good. This is the phase of the situation which leads to discussion along lines reflecting the bad qualities that can, and sometimes do, reside in assembled automobiles.

The makers of accessories and of parts are wise enough to know that the thing for them to do is to charge for good work, suitable material, and the finish that will reflect credit upon them. They know that purchasers will in the long run say what they will have, and refuse what they think is not worth the price. The result is, the makers of accessories and of parts are in a large measure responsible for the quality that resides in automobiles as displayed at the show; they made the low prices possible.

Specialists doing some one thing can do it well and quickly. These same specialists can quote a low price, and they can make it worth while to an assembler to use their product. As a matter of fact there is no better sign of quality in many of the cars of the day than the fact that "so and so" furnishes the axles, or the ball bearings are of such a make, and so on all along the line. When it comes to certain parts of automobiles, as magnetos, spark coils, batteries, spark plugs, and, in fine, a wide range of the materials used, they are almost invariably the products of separate establishments.

That good cars are good because they are so made is assured; it is not because they are segregated from the parts to be had from available sources, nor because of a two-ring circus under one canvas. That good accessories and parts of great merit may be had, is proven by the fact that they are at the show, open to the light of day, or the critical inspection of any man who is looking for quality rather than trouble. They are there and the price is very reasonable, indeed.

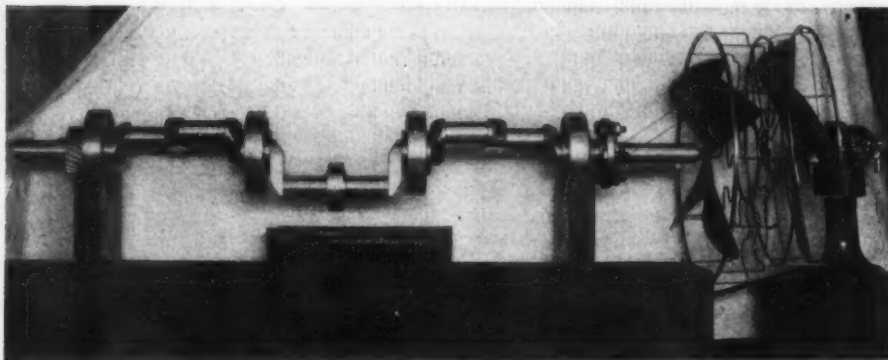
### AXLES AND BEARINGS

**American Ball Bearing Co., Cleveland, O.**—In the trade this company has a wide circle of acquaintance because of the vast number of high-grade balls turned out at the works. But if the company produces this product, it is also a fact that of ball and roller bearings a liberal quota comes from the Cleveland plant. Then, it is true as well that the American output of live rear and other axles and auto parts generally runs into a vast annual product.

The class of work turned out by the company is best sized up by noting that American products are found in nearly all of the finest cars.

**Hess-Bright Manufacturing Co., Philadelphia.**—There "with the goods," the Hess-Bright Company is in supreme presence, with ball bearings (the H-B and D.W.F. kind) known in every land to which the automobile has traveled and returned without trouble in the bearings. This year the company is offering to the trade a "magneto," the qualities of which

are assured by the endorsement of Henry Hess. This year sees this company with a line of "auto-hubs" of a distinctive character in which H-B ball bearings are used, and in which all possible means for safety are incorporated in the thorough manner to be expected under the guiding hand of engineers of such well-known skill. In the hubs the ball bearing spacers are also used, to take the responsibility should one of the ball bearings fail in service. History does not seem to know of a case of failure, and were it not for the fact that the spacers



Hess-Bright Ball Bearing Propelled by Air Fan.

have to be used anyway, it would look like an addition without a compensation. At all events, it is a "safety" at no extra cost, and as "Bob" Clingen, of the "Hess staff" puts it: "Mr. Hess takes no chances." That H-B ball bearings are regarded as valuable is proven by the fact that, at the show, they are all nailed down to the show board. Otherwise they might make fine souvenirs.

**Hyatt Roller Bearing Co., Newark, N. J.**—If "ham" spells "pig," "Hyatt" should spell "success." Anti-friction bearings are looked upon as of the utmost importance in automobile work, and it was

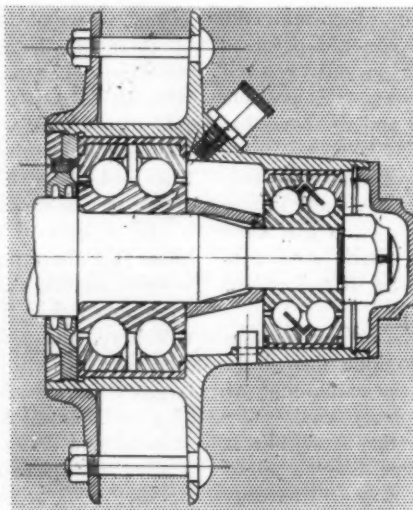


Type of Hyatt Roller.

the privilege of the Hyatt Company that had as much to do as any one with the question of how the bearings shall be. Hyatt roller bearings are used in live rear axles, transmission gearsets, and, in fact, in all the places of responsibility which call for the use of an anti-friction type of bearing. The "improved cage" holds the flexible rollers in correct alignment. The company now has some fifty distinct sizes in such shape as to assure prompt delivery. In 1901 only two cars were fitted with Hyatt bearings; 1907 saw twelve times as many makes of cars rolling on Hyatts, with another big increase in 1908.

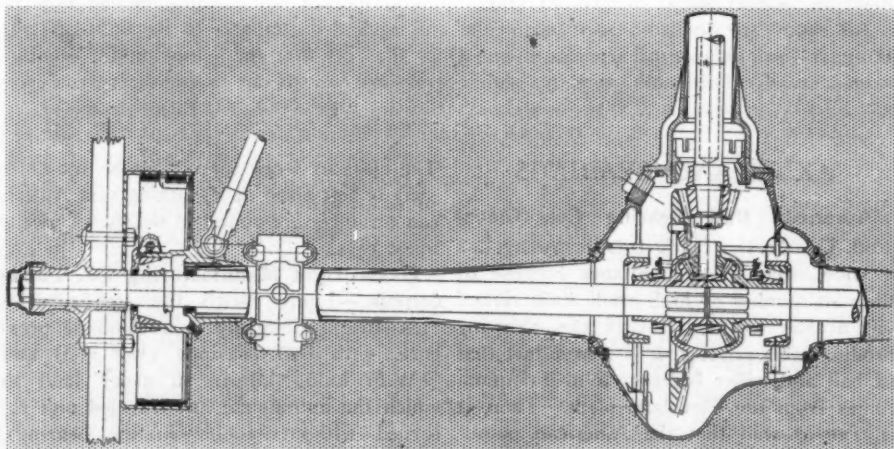
**New Departure Manufacturing Co., Bristol, Conn.**—In this age of sharp competition the idea of "waylaying the early bird" is rather bold, and to "get the drop" is a necessity, since the bird goes armed with merit, as a rule. The early bird is a clever chap, but the New Departure ball bearing will pull tail feathers if not well watched. In any case, the New Departure is out for its share of the glory, and it will be all right if the same is accompanied with a little profit, not only for the company, but for the users of the bearings as well. In a matter of this sort an advantage is—like the New Departure ball bearing—"two in one." This type of bearing takes thrust and radial loads, and its

value has been tried out in "taxicabs" under conditions such as they obtain in New York City. D. F. Graham, in charge of sales for the company, who was formerly superintendent of the New York Taxicab



New Departure Ball Bearing.

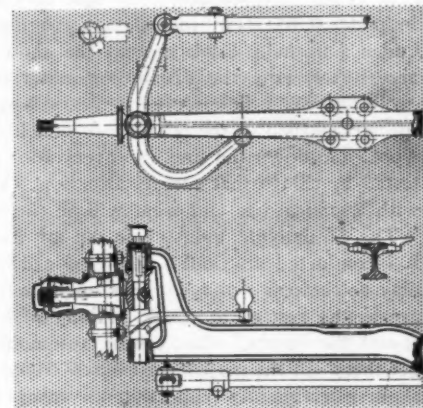
Company, sets forth the claims of the New Departure in convincing language, and his experience in this line gives him advantages which tell. The "two in one" idea is adequately illustrated at the show in that the bearings are placed to support a big flywheel that puts thrust and radial load on the bearings.



Timken Live Rear Axle—New 1,500-Pound Type.

**Standard Roller Bearings Company, Philadelphia.**—This company offers ball or roller bearings in every place of any considerable responsibility. For standard journal work there is the well-known Standard roller bearing; then there is a line of shafting hanger bearings and thrust bearings in ball and roller types. Of annular ball bearings the Standard Company has a full line, and they are so much used that reiteration is a mere matter of form. When it comes to balls the Standard makes them from "tool steel" to the line, such as serves well the purpose in bearings for even "lawn mowers," and it is not too much to say that a Standard bearing can be had for every application under the sun.

**Timken Roller Bearing Axle Co., Canton, O.**—Roller bearings of this make are used in so many of the automobiles of worth that the company is known throughout the length and breadth of the land. The home of the "Timken" is worth going there to see. At the show, the "Timken" has a new 1,500-pound type of front and rear axles that draw the "magnates." The front axle is of the I section of the usual Timken shape and accuracy of design, while the rear axle is "live," light, strong and complete. The new line of Timken—"short"—taper roller bearings is so much of an advance in the industry that it cannot well go unnoticed. Then, there is the Timken truck front axles in one, three and



Timken Front Axle.

five-ton sizes, with Timken roller bearings in the knuckles, which should go a long ways towards rendering steering pleasurable and safe.

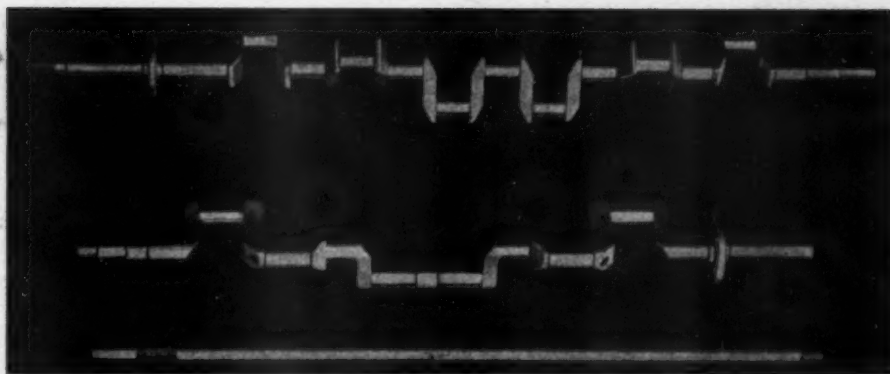
### CASTINGS.

**William Cramp & Sons Ship and Engine Building Co., Philadelphia.**—Axles, motor cases, steering gear housings, side levers, motor arms, connecting rods, linkages, brackets and multitudinous small parts, all of Parsons manganese bronze, from the famous plant of the great ship builders, Wm. Cramp & Sons, are in splendid profusion at the show. It looks like gold, this bronze. In practice it is like gold, in that it does the work up to the standard of the highest expectations, and it lends itself to the task in a manner not to be imitated, since it can be cast in intricate shapes with no limit to size. "As strong as an ox," is an old and trite saying that fits the case, as the following record of a test of "Parsons" will indicate: Tensile strength per square inch, 79,800 pounds; elastic limit per square inch, 42,500 pounds; elongation in 2 inches, 40 per cent.; reduction of area, 40.6 per cent. "Think it over," is what the expositor says.

**Henry Hess, Philadelphia.**—German made steel castings will be a Hess specialty pending the time when Henry Hess, of Nineteenth Street and Hamilton Avenue, Philadelphia, will fit out a steel casting plant. The examples of steel castings to be seen at the show are of more than passing interest because the shapes are intricate and the castings are of fine appearance, thus indicating that the claims made for them are not without good ground. Mr. Hess contends that the process used eliminates all the old drawbacks that long stood in the way of steel castings for many purposes.

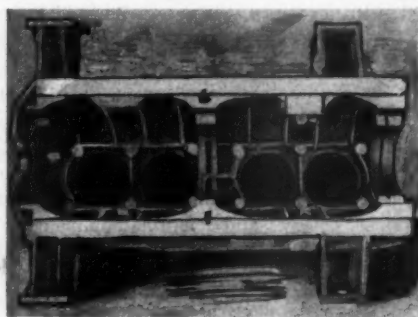
**The United States McAdamite Metal Co., Brooklyn, N. Y.**—McAdamite belongs to the aluminum genera. It came on the market a few years ago when aluminum was a little uncertain, but it has never shown any of the uncertainties of aluminum. It is used for every purpose that aluminum can be used, and its range of uses expands far beyond. Aluminum is light, McAdamite is light. Aluminum is strong; McAdamite is stronger. If aeronautics expand, it will be the metal of them all to do the work, and it is now largely used in this service, even for motor connecting rods. The price of this metal is low enough to enable it to be used in any place requiring light, strong metal, and as to the strength it is best disposed of by a record of a test as follows: Tensile strength per square inch, 44,250 pounds; compression per square inch, 126,000 pounds; torsion per square inch, 66,300 pounds; specific gravity, 3.20; fusing point, 1,040 deg. F.

**Light Manufacturing Co., Pottstown, Pa.**—The exhibition is of a "foundry



Dreggs-Seabury Alloy Steel Crankshaft Work Portrayed.

product," comprising aluminum, manganese bronze, phosphor bronze, plastic bronze and babbitts. The best reason why the Light Manufacturing Co., of Pottstown, Pa., will be able to deliver satisfactory castings of the kind is as the company states: "We are machining them every day and this helps us to know what we are doing, instead of waiting to have our customers tell us." At all events, this company is doing a large share of aluminum casting work, and on the basis that "a customer is a partner" the situation is one



Light Mfg. Co. Aluminum Work.

without a loophole through which a flaw can meander in.

**Wetherell Finished Castings Co., Philadelphia.**—The name spells finished castings all over, and there is no use to which castings can be put that this company will not undertake. The Wetherell Company is in a position to make everything by way of castings that can be used to advantage in automobile work, and a visit to the show will be incomplete without paying a visit to the Wetherell.

### PRESSED STEEL

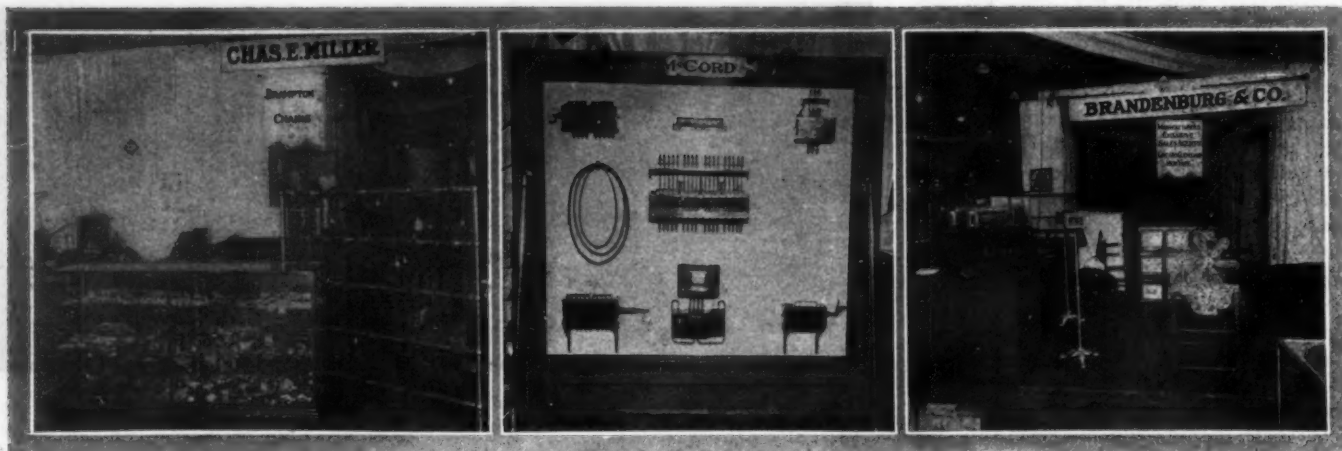
**Dreggs-Seabury Ordnance Corp., Sharon, Pa.**—The gunmakers of Sharon, Pa., with a plant, which on a war footing could supply the army with guns and ordnance a plenty, is well equipped to do automobile work, now that the automobile is up to the high level which was always essential when reference is had to ordnance. When the rush of the show is off, it will make fine reading; a story of how they do it at Sharon, those gunmakers, and

in the meantime it will be well to call attention to the fact that the Dreggs-Seabury "pressed steel rear axle housing" is the acme of stability, and the weight is down where it belongs. Fine material and the process that is natural to a plant which does work for "Uncle Sam" must in the long run find its way into such important parts as the housings for live rear axles. But the Sharon plant is not confined to just these parts, for at the show there are "drop forgings" gears and chassis frames as well as crankshafts and such like. This company can make anything in pressed steel, forge hammered and forged in dies. The materials the company uses are so fine that it is only in a gun or an automobile that they would find a resting place. Indeed, the Sharon plant will furnish drop forgings in all the tough-hard grades of alloy steel, as well as the products in carbon steel, a matter of greatest importance.

**A. O. Smith Company, Milwaukee, Wis.**—Pressed steel is now used for many purposes besides chassis frames in automobiles and the A. O. Smith Co. is "on the job." When it comes to chassis frames this company has them in all the forms, from the latest "drop frame" to the big channel shapes for trucks that stretch from "here to there." In material the parts are made in all choice selections, as alloy steel, special carbon and mild steel. There are cross members in intricate shapes that would be considered out the question a couple of years ago, and from brake-drums to spring suspenders the display is well worth spending the time if only to speculate as to how they do it. Nor is it so much a question of the diversity in form, from the point of view of "pressed steel," as it is the fact that this is an enormous industry that the automobile gave birth to, and the A. O. Smith Co. had a large say in the making of it. It was not a question of nerve, so much as a matter of business acumen and courage that brought results.

### CHAINS

**Baldwin Chain & Manufacturing Company, Worcester, Mass.**—In addition to its regular line, Baldwin roller chains, sprockets, and the new Baldwin improved



detachable chains, especially designed for automobile use, this company is now placing on the market a new and improved type of automobile steering gear. This is designed along totally different lines from those now favored by current practise for this purpose and the result has been not only to greatly simplify the gear as a whole, but likewise to make it an extremely reliable device in which wear has been distributed over such a large surface as to be practically a negligible quantity. A detailed description of this new steering gear will be given in a later issue.

**Charles E. Miller, New York City.**—

The space allotted to this accessory dealer is not equal to his importance, and the large line of goods handled, besides which, it is not well located, being hard to find and sandwiched in between two automobiles. The principal feature of an excellent exhibit is the English made "Brampton" chain, which may now be had in American sizes, as well as the former metric sizes. These celebrated driving chains are made throughout of self-hardening steel of superior quality, made accurately to gauge, and carefully assembled and polished so as to fit the sprocket with a minimum of friction. No provision is made for replacing the heavy chamfered side plate, because in the history of the company no torn, broken or sheared side plate has ever been brought to their attention. This fact in itself speaks volumes for the merit of the "Brampton" chain.

**Diamond Chain & Manufacturing Company, Indianapolis, Ind.**—One of the most interesting parts of the Diamond exhibit is something that the average visitor is not apt to realize the value of unless his attention is called to it, and that is "Pamphlet D," the mission of which is to describe "Diamond Chains, as Applied to Chain-Driven Automobiles." It is of more than ordinary interest for the owner of a chain-driven car of any type or model, since it not only gives the names of makers and the models on which they are now using chains, but every model of chain-driven car that has ever been made in this country. The width, length and number

of chains used, i. e., whether single or double side chain-driven, is given in every instance so that the pamphlet is an aid in ordering a replacement for an old car. Attention is also called to the fact that Diamond chains are made to fit sprockets of any standard, and can be used on American chain-driven cars of any make. Nickel steel rivets are used in the manufacture of all Diamond auto chains.

**Whitney Manufacturing Company, Hartford, Conn.**—In addition to the "Wizard" chains and sprockets, rollers and block chains, made by the Whitney Company, and which are too familiar to call for extended mention, this concern also shows a number of specialties for automobile manufacturers, such as the Woodruff system key cutters, water tool grinders, hand and weight feed milling machines, "Presto" chucks, collects and friction tapping devices and the like. "Whitney Chains and the Cars They Drive" is the title of a booklet under date of July 1, 1908, detailing the dimensions of Whitney chains used on many of the leading makes of American cars, and attention is called to the fact that the Whitney Company is now preparing to furnish roller chains for all American chain-driven cars, whether the sprockets are cut to the

Whitney standard or not, special attention being paid to odd sizes.

### SPRINGS.

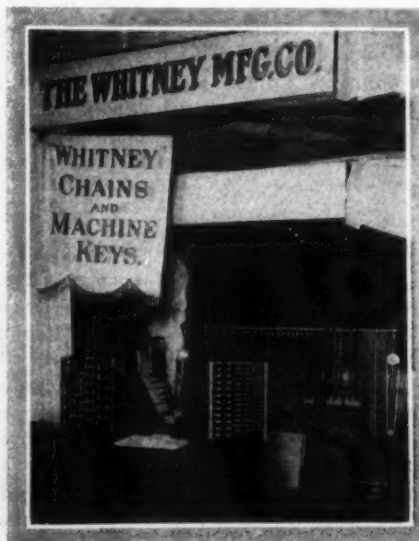
**Burnet Compound Spring (Inc.), Newark, N. J.**—The "Burnet" is there, and its non-shock qualities are being demonstrated in a manner intended to convince the interested spectators. The spring consists essentially of two superimposed elliptic springs so designed as to afford that flexibility so much desired, without the spring play that generally goes with it.

**J. H. Sager Co., Rochester, N. Y.**—A line of equalizing springs that promise immunity from the ills of road inequalities and the large cost of maintenance that follows. In action, the "Sager" type of spring works freely, and in reaction the violent upward tendency is checked without any undue rate of change of motion.

**Perfection Spring Company, Cleveland.**—The use of fine materials, such as "Krupp" steel for springs, renders it possible for the Perfection Spring Co. to hold the reputation for quality that its springs have made for it in automobile work. The "Perfection" is a special spring with easy riding qualities as a proven fact, and hundreds of testimonials to show for it. The company also makes springs after designs by the makers of cars, adding the knowledge due to a wide experience if the designers so indicate. On the other hand, if car builders have just what they want, the Perfection company sticks to the specifications.

### FORGINGS, TUBINGS, JOINTS.

**Anderson Forge and Machine Co., Detroit, Mich.**—Located in the heart of the Michigan automobile industry, it is not to be wondered at that this company has progressed along lines such as ended in a line of "drop forgings" for automobiles, including crankshafts, connecting rods, and, in fine, everything that can be of any value in automobile work. The company is equipped to do a vast amount of the highest grade of drop-forging work, and the materials used by it are of the superior grades for the purpose.



**Spicer Universal Joint Mfg. Co., Plainfield, N. J.**—This concern shows by its line that it has fully realized the importance of universal joints as one of the vital parts of a complete car if the full power of the motor is to be properly applied to the rear wheels. For the coming season it is producing a line of these joints in about a dozen different varieties, from the simplest to the complete propeller shaft with double universal. Recognizing the fact that there is a change in the velocity between the driving shaft and the driven member where only one universal is used, models No. 26 and No. 30 are especially designed to overcome this. Spicer universal joints have a large bearing surface, are easy to take apart, and protection from "grit" is adequate.

**Standard Electric Welding Co., Cleveland, O.**—This company turns out seamless steel tubing and steel rings, as well as axle housings in the same way, clincher rims and all the other things of steel electrically welded or in seamless form. The Standard exhibition is of the greatest interest, and the company probably plays a far more important part in the trade than the average designer of automobiles dreams of. The "parts makers" all claim the Standard as a twin brother, and when the Society of Automobile Engineers went to Cleveland last Summer they visited the plant of the Standard Welding Co., in which they were enabled to "see things."

**Shelby Steel Tube Co., New York.**—Shelby steel tubing is the subject, and the wide range of this material offered by the company is reflected at the show. This tubing is made in rounds, squares, and special shapes that have to be good to stand the process, which process, however, improves the quality of the material, in that "fabrication" when properly conducted always adds to the physical properties of steel, if the material is of a quality such as will stand the process. The "show board" of the Shelby is a picture to behold; upon it will be found all sorts of products, hubs for wire wheels, bicycle forks, pump barrels, taper tubes, gas engine cylinders, upset tubes, etc. What attracts much notice is a tube tied in a knot. This in itself demonstrates that the ma-

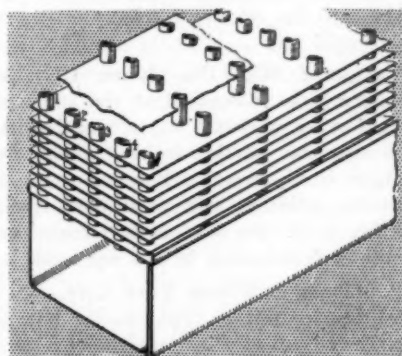


Shelby Steel Tube Upset at Both Ends, Showing Quality.

terial is of fine character. Shelby steel tubing has a wide range of uses in automobile work, and it has always had the reputation of making good.

### RADIATORS.

**McCord & Co., Chicago.**—For general appearance the radiators as made by this company are all that can be desired. The plan is one that results in great stability, and the efficiency of the radiator has been



Section of McCord Radiator.

pronounced good by the many users of the type. It will be remembered that in the McCord the water tubes are vertical and flat plates, quite closely spaced, serve to radiate off the heat.

**Briscoe Mfg. Co., Detroit, Mich., and Newark, N. J.**—This concern has for this year tubular and cellular radiators. The horizontal tubular type contains flat tubes extending from right to left and arranged so that two tubes side by side alternate with one placed centrally. Cooling is by vertical metal plates whose edges face for-

wards. The Briscoe honeycomb radiator is made by taking lengths of seamless tubing almost one inch in diameter. By pressing in a form this tube is made into three diamond-shaped tubes, the ends being diamonded and the central parts slightly corrugated, so that when two or more sets of these three tubes are put together, a water place is left between them; but the regular diamond-shaped ends unite forming a containing wall. This allows of a vertical water flow and a horizontal flow between each two, three or five squares.

### GEAR SETS, ETC.

**Brown-Lipe Gear Company, Syracuse, N. Y.**—The new transmission gearset of the Brown-Lipe make is styled after the same make of transmission as used on "Thomas" cars, excepting that the position of the "second" shaft is reversed. It is a neat piece of work, well up to this company's standard, with alloy steel gears and parts of responsibility. The case is of aluminum. The greatest advance, perhaps, lies in the methods of heat treatment this product is subjected to.

**Merchant & Evans Co., Philadelphia.**—The Hele-Shaw is the multiple disc clutch in which the discs "engage" on the grooved faces instead of on the flat. With ten sizes to choose from, the builders of automobiles are enabled to get what they want; for the little car with the "one lung" or for the ponderous racing car one will find a clutch to match. The Hele-Shaw idea came from abroad, as did many of the ideas which automobiles fell heir to, and it is one that has not been "messed up." The Merchants & Evans Co., report new converts to the swelling list.



## SHIELDS, TOPS, BODY MOUNTINGS, SHOCK ABSORBERS

**E. T. Burrowes Company, Portland, Me.**—The Burrowes windshield made in halves differs from many others in that the lower half can be set at any angle to the car dash, and the upper half also mounted at any angle to the lower half. The shield is supported without forward extending brace rods, but by short brace rods extending from projecting brackets on the rear of the dash. The brace rods attach to the top of the lower half and into a bracket on the bottom of the lower half, which bracket hinges to that on the dash, and is held at the desired angle by a thumb screw in the lower half bracket working in a quadrant slot in the bracket on the dash. The top half hinges to the lower half by end hinges, each hinge being made in halves with serrated opposing surfaces, so that by loosening a locking nut on each hinge the serrated faces separate enough to let one be slipped past the other until the top half is at the required tilt, when tightening the locking nut bring the serrations into engagement, thus forming a positive lock.

**C. Cowles & Co., New Haven, Conn.**—This very old and well-known company is at the show with a fine line of brass fittings as used in automobile work, and among other things the limousine case in two styles attracts much attention. The case for ladies is a marvel of completeness. Besides a watch that will keep time without any question, the case holds all the requisites, among which is a hand-mirror, on the back of which is a slate. Then there is a card case and memorandum books, also a record book, not to mention a "puff." For men the case includes a cigar holder and a container for cigar ashes. These cases are not only of the greatest utility, but they are artistic and distinctive.

**C. A. Mezger, New York City.**—In the Mezger windshield the upper half hinges to the lower, and in lowering it nothing has to be done but pull it closed. This is made possible by a spiral spring so placed that it tends to hold it in the up or closed position. The shield is further locked in the up position by an inverted L-shaped hinged catch, the upper or horizontal part of which fits over a toe on the frame of the upper half and is held thereon by plunger and spring, a sudden jerk being sufficient to free the toe from the catch.

**Sprague Umbrella Co., Norwalk, O.**—The tops and windshields made by the Sprague company show that Col. Sprague has profited by his wide experience in this field of work. Besides the regular full line of tops and shields, this concern is offering for the coming season a top designed to meet the demands for runabout use. It is so arranged that the long front bows sometimes used have been done away

with in order to facilitate entering and leaving the car. The forward bows on this top will slide down on the middle one, giving additional ease in lowering and raising. With its long front overhang and sharp turn it makes an ideal protection for either bad weather or hot sun.

**Troy Carriage Sunshade Company, Troy, O.**—The Troy windshield for runabouts with the angular lower half is fitted with a device to prevent the lower half from breaking when being folded forward to the horizontal position. This, in brief, is a telescopic brace rod, the inner member of which has a split end within which is an expanding nut controlled by a finger wheel at the end of the upper half and in easy reach of the driver from the seat. To lower the shield, it is but necessary to turn the finger wheel, after which the air cushion in the telescopic tube will prevent a too rapid fall.

**Vanguard Mfg. Co., Joliet, Ill.**—The display of the Vanguard at the show attracted much attention on account of the high character of the devices, notably the Vanguard windshield. Besides a certain desirable stability, this windshield is adjustable from the seat, is both light and strong, and moreover it will not rattle.

**Pantasote Co., New York City.**—As a substitute for leather, Pantasote is now so well known as not to require a long reiteration of its lasting qualities. As a matter of fact, Pantasote is superior for the several purposes to inferior grades of leather, and for that matter it is so well made that it looks quite as good as most grades of

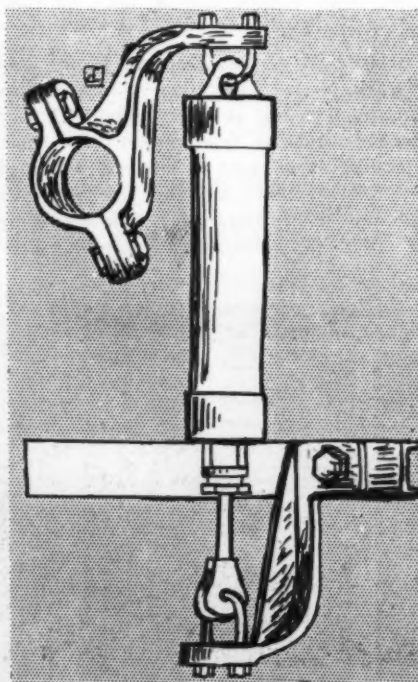
leather in upholstery work, once it is in place, if the workmanship is well executed. There are imitations of Pantasote that do not come up to the scratch, and it is these imitations that should not be used in any comparison to be made. Pantasote is made in all shades of colors and in the several weights.

### SHOCK ABSORBERS.

**Ernst Flentje, Cambridge, Mass.**—A certain amount of interest is centered around the shock preventer as exhibited by Ernst Flentje. Recourse has been made to the glycerine cylinder with a piston, which has a very simple valve arrangement allowing for compression of the springs without hindrance, but prevents the quick throw-back, as the area of the holes through which the liquid passes on the compression stroke is about five times what it is for the opening. The valve opening is very short and quick of action in both directions. No matter how sudden the closing of the spring, the recoil is smooth and easy, due to the slow passage of the glycerine through the restricted ports.

**F. R. V. Auto Parts Company, New York City.**—The F. R. V. shock absorber consists of a belt, which at one end is looped around the car axle, and at the other fits over a drum secured to the car frame and attaches to a radial arm carried on a stud, to which a coiled spring is secured. Normally, the spring is under tension. When the frame drops as the wheel enters a depression, the strap slackens, but all of this slack is immediately taken up by the coil spring, the belt being wound on the drum. When the rebound starts, it is resisted by the spring tension as well as the friction of the two or three loops of belting on the drum. The principle is the same as when a rope is wound once or twice around a shaft in order to support a weight, or to lower it more easily. The only difference over last year's design is that the spring tension or adjustment of the absorber can be accomplished from the outside without removing the cover cap.

**Hartford Suspension Co., Jersey City, N. J.**—"Over twenty automobile companies now use them." Truffault-Hartfords are so well and favorably known as to require no further introduction, unless to run over to "old standbys" and to note that they are alive to the advances that time interjects into a "live" industry, which life the "Hartford" did its share—liberally—to interject. In the meantime it is interesting to note that the Hartford Suspension Co., at its plant in Jersey City, is running full capacity, with small chance of doing more than to keep above the orders that naturally are due.



Flentje Shock Absorber.



## ARTISTIC AND SCIENTIFICALLY DESIGNED LAMPS

**Atwood-Castle Co., Amesbury, Mass.**—The new double-drip generator of this company's make is well worth the close attention of the users of generators, and the "black-nickel finish" is certainly something to consider when lamps are being selected. In square shapes, the company's line is artistic, and as to utility, the lamps "stay lit." On the whole the Atwood-Castle line covers everything in lamps and generators for the automobile.

**Badger Brass Co., Kenosha, Wis.**—The exhibit of this company at the show represents an extensive line, with a style of lamp for every purpose in automobile work. The "Solareclipse" and the "Auto-clipse" types are handsome and of greatest value in automobile work. Then, again, there is the patent-leather finish in all the styles of Solar lamps and generators. A leader in the line is the new square carriage there is the "patent-leather finish" in all the Solar motorcycle lamp, in a headlight pattern, including a generator.

**Gray & Davis, Amesbury, Mass.**—Lamps and generators of this make are known in every nook and corner in the land. The display this year at the show is extensive, indeed, and the company proposes to maintain a lead its goods enjoy in certain quarters, which, however, is not to be the limit of the company's endeavor. In square effects the Gray & Davis oil lamps are of the greatest utility, and the general appearance is handsome. The lamps, with lenses, are of the class in which

the lenses can be removed, and the old game of soldering and riveting is not present in Gray & Davis lamps. The generators of these lamps are of the class that commands attention.

**C. T. Ham Mfg. Co., Rochester, N. Y.**—These makers of the Ham "cold-blast" auto lamps are at the show with a full line, and visitors comment favorably upon the display. This company is furnishing lamps in the usual "bright" finish or in the "black nickel finish" so prone to be the feature of the year in lamp and generator finishes. In one other particular, the Ham lamps are worthy of more than a little attention: the oil lamps are so designed as to admit of the use of electric lights, or acetylene burners can be used instead. This is a feature that will be much appreciated by autoists in general.

**Rushmore Dynamo Works, Plainfield, N. J.**—In lamps and generators the Rushmore line is, as usual, so complete as to be up to every requirement of the autoist and the maker of automobiles, if quality *per se* is to be the guide. Rushmore also has the happy faculty of landing a surprise at regular intervals. This year the present from the Rushmore plant to the autoist by way of a generator will be "valveless." When this statement is made every autoist in the land will know what it means, and further comment is a waste of time. The new Rushmore idea is one that takes account of a perfectly even flow of the gas, at the required pressure, and it will be well

worth a trip to the show to see how Rushmore accomplishes the trick. That he does make good is assured. The new multiplex non-flickering glass system of the Rushmore line is attracting much attention.

**Edmond & Jones Mfg. Co., Detroit, Mich.**—This company has on exhibition a splendid line of lamps and generators in the regular finish as well as in the "black nickel" finish. The originality of some of the designs is favorably commented upon by the spectators, and the company reports good business. In side oil lights the square effect is something to take a second look at, and the generators by this company are of the greatest utility.

**George S. Sherman, Great Neck, N. Y.**—The circular rotary light as made by this company is something for every autoist to consider. By means of the Sherman equipment it is possible to project the light in any direction before the car turns. In this way the chances of getting off the road or of colliding with an obstruction, out of the line of the usual fixed light, is avoided.

**J. W. Brown Mfg. Co., Columbus, O.**—This company is at the show with a fine line of automobile lamps in all the latest shapes and finishes. The generator is of an approved pattern, free from any tendency to clog up, and by its principle of design the gas is furnished at an even pressure, free from impurities and capable of making a pure white light of great intensity. The company is in a position to entertain any lamp proposition involving quality.

## TELL-TALE SPEEDOMETERS IN VARIETY

**Auto Improvement Company, Brooklyn, N. Y.**—These manufacturers of the Ever-Ready centrifugal-force speedometers, with which are incorporated odometers "made in Germany," have made a great improvement in all of its instruments by the use of the new direct drive which is made without any springs. A new Universal model has a floating indicator supported from the periphery of the dial, rather than a pointer supported at the center like the hands of a watch. All in-

struments are fitted with the straight vertical shaft drive.

**Hicks Speed Indicator Co., Brooklyn, N. Y.**—The Hicks indicator, made in four models, is characteristic because of its square glass, beneath which is a crescent-shaped dial, a clock, season and trip odometers, according to the model. This speedometer operates on the centrifugal force principle, the two oppositely placed ball governor weights being carried on a vertical shaft, which is within the instru-

ment. The regulation from the governor sleeve to the indicating needle is through a lever combination. One of the models is fitted with a maximum speed hand, while two others may be so fitted at an extra charge.

**Hoffecker Company, Boston, Mass.**—The Hoffecker for 1909 is made up of a combination speedometer and Chelsea clock with the total mileage and trip mileage indicators incorporated in the speedometer. To illustrate the steadiness of the hand

some ingenious person constructed a jolting apparatus on which the instrument is mounted and in operation at various speeds.

**Jones Speedometer Company, New Rochelle, N. Y.**—This old and well-established firm has met the demand for a more popular-priced instrument by placing upon the market, along with its regular line of about twenty different styles, three new models of the straight drive type. No. 27 and No. 28 indicate speeds up to 50 miles per hour and are fitted with odometers. No. 29 registers to 60 miles per hour.

**Stewart & Clark Mfg. Co., Chicago, Ill.**—Speedometers have come to be looked upon as almost a necessity in the equipment of a car, and this concern has constantly kept abreast of the times with a

complete line. For 1909 it has added to its already long list of types working on the centrifugal force principle, a magnetic one, No. 11, with the indicating hand carried in the center of the dial, the scale forming almost a complete circle. The season and trip odometer, with the new resetting device, are all incorporated in this type. All sorts of combinations of speedometers and clocks are made, and at prices which are within the reach of every owner.

**Veeder Manufacturing Company, Hartford, Conn.**—The exhibit of this firm is complete with a full line of its liquid speedometers in operation at different speeds. The liquid used is either colored alcohol or kerosene, held in a small reservoir at the bottom of the instrument, under which is a centrifugal pump driven by the flexible shaft. The liquid is forced up into

the calibrated vertical glass scale from the periphery of the pump, the height being relative to the speed. Both the odometers are held at the side of the vertical scale, where they may be easily read by the driver.

**Warner Instrument Company, Beloit, Wis.**—Although the outward appearance of the Warner instruments has been changed some for the coming season, the workmanship remains of the same high order as formerly. These recorders are of the magnetic type, furnished with 10,000-mile season and 1,000-mile trip registers, and an enclosed electric light. The Warner-Auto clock is mounted above the speed indicator if so desired. As an effective antidote for friction and wear, and to insure absolute accuracy of operation, the dial rides in sapphire jewel bearings.



## INIMITABLE SIGNAL SYSTEMS EXHIBITED

**Automobile Supply Mfg. Co., Brooklyn, N. Y.**—In common with many other sundries and accessories made and sold by this concern, the full line of Nonpareil horns was exhibited with telling effect. A new line is being brought out for the coming season, which will appeal to the particular buyer. These horns are on a new patented line and have a rich, penetrating tone. The novelty, compactness of construction, and reasonable prices should make these horns leaders for 1909.

**Comptoir d'Innovation Pour Automobiles, New York City.**—This concern with the unpronounceable name show an air compressor with another jaw-breaking name, the Delpeuch. This is an excellent little water-jacketed single-cylinder compressor of very simple construction, with no packing or washers. The diameter is 2 3/8 inches, and the stroke 5 1/2. It will work in any position, can be driven by hand, chain, belt, or otherwise, and can be used anywhere that compressed air is useful. This size will produce a pressure of over 100 pounds in a 50-gallon tank in less than 10 minutes, while a smaller size of a simi-

lar type and construction, but without the water-jacket, will give 90 pounds pressure in any tire in less than a minute. The Delpeuch jack and the "Nightingale" horn were also displayed.

**Gabriel Horn Mfg. Co., Cleveland, O.**—The product of this company is too well known to require any detailed description. So, too, was their exhibit, which was just a showing of good horns. These were present in all sizes, and a human exhaust seemed to be ready at all times to show the tone of any fancied horn. The growth in the use of these pleasant announcers of one's approach has been so great that factory additions are contemplated to care for the additional business. Realizing, too, that an efficient muffler cut-out in conjunction with the horn relieves back pressure and increases the motor power, they have introduced a new design of muffler cut-out valve, which is so designed as to decrease the back pressure.

**Garage Equipment Co., Milwaukee, Wis.**—Malleable instead of cast iron is used in the construction of the Hux combination muffler and chime valve. There is

a direct passage of the exhaust either to the horn or to the cut-out. While the latter is being used the horn generally is closed. The cut-out and horn valve are independent and both can be used separately, which does away with the necessity of having two valves. Butterflies are fitted and operate on brass pins.

**Sireno Company, New York City.**—This manufacturer of electric siren horns is showing, besides the older models, two new types for 1909. These, called respectively the "Sireno" and the "Sireno Junior," resemble in external appearance the ordinary searchlight. The former is for touring cars and the latter specially made for runabouts and other small cars. These two new additions to the Sireno family have embodied in their construction a number of improvements which make the horn more flexible, starting and stopping the instant the button is pushed. Both of these new types have ball-bearing motors and will operate on six volts. Interest displayed in these new horns must have been gratifying to the manufacturers, crowds surrounding the exhibit whenever observed.

## OIL, GREASE, AND GRAPHITE LUBRICANTS

**H. F. Alexander & Company, New York City.**—The well-known Panhard cylinder oil, the oil in the checkerboard can, is shown by this firm, which manufactures it under a license. Grease made by these people was also shown. With the great interest displayed in all oiling devices this year, which cropped out in the form of oil or grease cups on every rotating part, it was not surprising to find a crowd before every oil and grease exhibit in the building. The Panhard oils attracted much attention.

**Joseph Dixon Crucible Company, Jersey City, N. J.**—The discussions in the trade papers during the past year on the relative merits of oil and graphite for lubrication purposes paved the way for the intense interest in the graphite exhibits. The largest of these was that of the Dixon Company, which showed flake graphite for mixture with oil to be used for crankcase lubrication, graphite cup grease, graphite wood-fiber grease for gear cases, chain compounds for chains, pipe-joint compounds for exhaust pipe joints, and many other forms of commercial graphite.

**Duffy Grease Company, New York City.**—A transmission in action, driven by an electric motor and packed with Duffy's grease, was a feature and attracted a lot of attention from the visitors to the gallery. This company specializes on greases not only for automobiles, but for all forms of machinery and all classes of moving and rotating mechanism. The grease showed that it is good stuff, as it had been running for over twenty-four hours when viewed. This long, hard use had not made it any more fluid than at the start, proving the truth of the company's motto, "Once a grease, always a grease."

**A. W. Harris Oil Company, Providence, R. I.**—This company adopted a most unusual and original method of displaying its lubricating oils. This consisted of a high, narrow stand on the top of which four slightly inclined cans were allowing oil of the four different grades to flow through a small capillary tube into a large glass stand-pipe, thus showing how the oil flowed and its even color. From the base of the stand-pipes, the oil rose to another series of cans, from which it was allowed to flow upward through a gauge glass drop by drop into a third series of cans. From these it was led out onto open inclined zinc troughs, where the oil could be examined and felt of. Four grades of oil were thus displayed, the light, medium preferred for cylinders, heavy and a new grade called superheated steam, which is of 700 deg. fire test. The whole exhibit was very interesting and instructive. In addition the company were giving away oil barrels—printed on heavy cardboard.

**Havoline Oil Company, New York City.**—These well-known makers of highest grade oils under the trade-mark Packard, showed small samples of their product, the idea being that the many well-distributed users were a better advertisement than a large space with many glittering lights, uniformed attendants, etc. A line of grease was also shown, including the Packard universal joint graphite grease, non-flowing gear compounds, etc. The exhibit which attracted the most attention, however, was the famous, but high-priced crystal oil, first manufactured regardless of price for the Locomobile racing car, but so good that quantities of it were sold at first at \$2 per gallon. Later an increased demand allowed greater production, which in turn allowed a big reduction of price down to a figure but slightly above the regular price of other oils.

**N. Y. and N. J. Lubricant Co., New York City.**—The well-known brand of non-fluid oils formed the basis of this exhibit, but the most interesting feature was perhaps the showing of the new Motorol brand of cylinder oil, exhibited for the first time. This is made in four grades: extra light, light, medium and heavy. A special non-fluid oil is shown for use in water pumps. This is a special waterproof production with a high melting point.

**Keystone Lubricating Company, Philadelphia, Pa.**—Grease, grease everywhere, but not a drop to drink! It is to be hoped at least that no one tried to drink, eat or otherwise dispose of any of the Keystone greases, good as they are for an automobile. Two grades are made, and both were well shown at the Palace exhibit. The No. 1 grade is solid for use on grease cups, axles, pumps and other places where a solid lubricant is advantageous. No. 2 grade, on the other hand, is but semi-solid for transmission and differential

cases, but is fluid enough to allow of its use in grease and oil guns. The quality of this grease cannot be shown in any exhibit, actual use being necessary only to prove their statement that a pound of it will outwear three or four pounds of a cheap grease or five gallons of an inferior oil. Grease cups in all commercial sizes completed the exhibit.

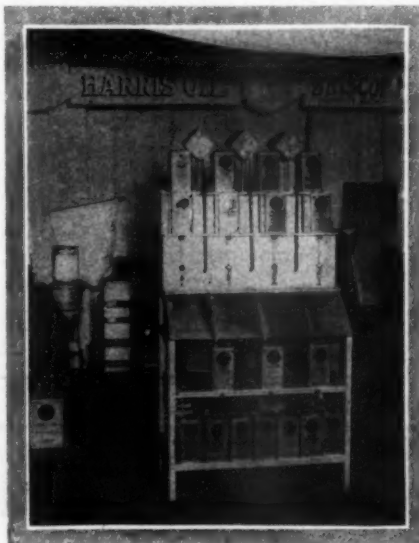
### LUBRICATORS.

**McCord & Co., Chicago.**—Prominent on the stand of McCord & Co. is a recently developed device styled a class O lubricator, which is designed to give constant sight feeds on the dash, without the necessity of the oiler itself being located there, or the alternative of two lines of piping for each sight feed up to the dash and back to the lubricator. This design attaches to the engine side of the dash with the sight feed projecting through. It is driven by a vertical shaft connecting with the camshaft of the engine, which method of driving, however, can be varied to suit different requirements. Originally the company had intended to get this oiler to draw its supply from an auxiliary tank by means of the combined suction stroke of the small plungers. Experiments, however, demonstrated that this proposition was too delicate for general use.

### OIL GUNS, ETC.

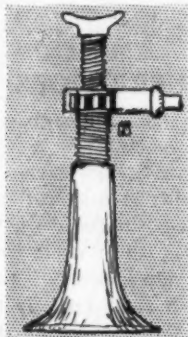
**Garage Equipment Co., Milwaukee, Wis.**—The Perfect combination oil and grease gun is featured on this stand. The device is made of heavy seamless steel tubing with malleable iron top and bottom, while heavy leather washers are used in the plunger as a packing and on the pump between the cap and barrel. When the gun is used for grease it is operated by means of a crank. A gear on the crank is thrown in the mesh with a rack on the pump plunger, and it is operated by turning the crank, this securing a very high pressure. When it is used for oil the gear is slid out of mesh with the plunger rack and the plunger worked up and down in the usual manner. This gun also can handle gasoline.

**Randall-Faichney Company, Boston.**—Three new sizes of oil guns are ready for this year: a 5-ounce Broadway type, a 5-ounce Back Bay, and a 9-ounce Boulevard. The company is now making and marketing the Webster gasoline gauge, which consists of a hollow ball float resting on the top of the gasoline, and communicating with the dial through a miniature bevel gear on the opposite end of the float stem, meshing with a spur pinion on the lower end of the vertical shaft carrying the indicating needle. The gauge can now be attached without solder.



## TOOLS FOR THE AUTOIST IN PROFUSION

**W. M. Briggs, New York City.**—As representative for a number of tool makers, W. M. Briggs has on exhibit a full line of jacks, tools, and garage equipment. The Joyce-Cridland telescoping jack has some features which single it out as worthy of



Joyce-Cridland Jack.

attention. It is designed on the double-screw principle, with both the right and left-hand screw working at the same time by the use of a ratchet handle. When down, the height is nine inches, and it has a capacity for three tons.

**Coes Wrench Company, Worcester, Mass.**—After seventy years of experience in the field of wrench making, the Coes company should be in a position to know something about how a serviceable wrench ought to be made, and the new line for 1909 clearly indicates that even if it is getting into a class ordinarily termed "has beens," where age counts, it will not apply to this firm. Good wrenches are an absolute necessity in the tool kit of an automobile, and the growing demand for those of Coes manufacture shows that they have withstood the hard usage to which wrenches are always subjected.

**Elite Mfg. Company, Ashland, O.**—"By all means get the best jack you can." Naturally working along these lines a very excellent product is the result. This, the "Reliable Jack," is simple, has very few parts, is strongly constructed, reverses readily, is clean to use, and has numerous other good features, which space will not allow mention or description of. This is a screw jack, the screw being turned by a bevel gear, and rotated by the hand lever which works like a ratchet. These jacks

are made in every size and capacity up to 10 tons.

**Perfection Wrench Co., Port Chester, N. Y.**—The absence of "back lash" in the Perfection wrench is one of its advantages, but it has so many good features that it will be out of the question to do more than call attention to the fact that the wrench can be seen at the show. It will be remembered that this is the wrench which takes the place of a whole kit of wrenches because it is a combination wrench, including the features of a "monkey" and a "Stilson."

**Quincy, Manchester, Sargent Co., Plainfield, N. J.**—Tools which are designed to meet the various uses demanded in automobile construction are always a handy thing to have in the kit. This company hit the nail squarely on the head with its Auto Cle wrench, and now comes forth with a junior edition, the Titus Cle, which will probably prove just as useful. This smaller set is furnished complete with handle and set of sockets carried in a small, compact canvas case, which will well repay the initial expense.

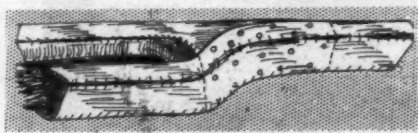
## ACCESSORIES FOR EVERY POSSIBLE NEED

**Austro-American Separator Co., Cleveland, O.**—No-Shamy is the name given by the Austro-American company to its gasoline and water funnels, which are to be displayed. As its name indicates, this funnel may be used without chamois, it being claimed that this device separates all water and dirt from the gasoline and prevents it from going into the tank. This is accomplished by means of a double separating process. The automatic separator is installed in the gasoline line, under the footboard of the car between the tank and the carburetor, and it is said that even if the tank is full of water not a drop can reach the carburetor.

**Brandenburg & Company, New York City.**—This firm's large space is devoted to large things handled by them, as engines, metal bodies, lubricators, etc., so that one interested in wind shields had to look carefully to find it. However, the Ross & Browne shield, which the firm handles, is well worth the search. As shown, it is carefully made of mahogany, brass bound, with plate-glass, and divided just below the line of vision. An unusually stout construction held the upper part up in place, without rattle or jar, and yet was easily and quickly loosened when it was desired to have the glass dropped down, a pair of large milled head screws of brass being the whole operating mechanism, which in itself is simple and effective.

**Caloris Mfg. Company, Philadelphia, Pa.**—This caloris or vacuum bottle for retaining heat or cold, according to which is desired, has a new feature in that the construction is such as to be practically indestructible. This is secured by making the inner glass bottle separable from the metal case, the bottom of which screws out and carries a spring base. Besides this spring a pad or cushion is used, which rests upon the spring, the bottom of the bottle in turn setting on this. By that method the bottle may be handled very roughly without danger of breakage, in which unexpected and rare event the whole bottle need not be returned to the factory, simply write for a new interior glass portion. For those who prefer it, the bottle may be had with a wicker jacket, which is much lighter than the metal and not so fragile. The efficiency of these were being demonstrated by ice and hot water.

**Gemmer Manufacturing Co., Detroit, Mich.**—The importance of "steering gear" is well understood by all who may have given the matter a moment's thought. However faithful the pilot, it counts for



Reinforced Chadwick Frame.

naught if the "wheel" fails to command, and "lost motion," next to a wheel adrift, is the bane that leads to the "mahogany." The Gemmer is well represented, and the fitting qualities of the "Gemmer" are clearly portrayed. The double screw idea with means for adjusting to compensate for lost motion is of the greatest value, which, along with the fine materials used in the type, goes the greatest possible distance in the direction of safety.

**Gloversville Auto Glove Company, Gloversville, N. Y.**—The Ideal Separable glove, for instance, is a new idea, two gloves in one, normally fastened together, but separated at will. The outer is a hard service leather envelope with no opening in front, but fastened at the wrist by means of a strap and button. The inner real imported Angora glove is for warmth and has a double wristlet wrist of extra length. Either may be worn alone or when both are worn together if wet they may be separated and quickly dried. Besides, a full line of excellent gauntlets is displayed. All gloves have the seam on the side and not on the under part of the thumb, where the hand grasps the steering wheel. These gloves are all sewn with "C" silk, no thread being used, and they may be had in any of the popular colors. The cuffs—so important to the automobile driver—are all made of solid leather, on M. W. M. design.

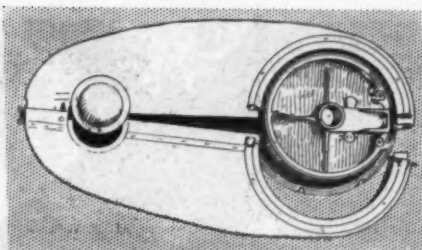
**Hydraulic Oil Storage Co., New York City.**—The garage system evolved by the Hydraulic Oil Storage Co., is designed to eliminate all gasoline valves. This system, known as the Snell Hydraulic, is based upon the difference in the specific gravity between gasoline and water, and the fact that they do not mix. The tank always is full of liquid, and the fact that there is no air to come into contact with the gasoline prevents a loss by evaporation and protects the tank from possible explosions by fire, electric spark, or lightning. In order to prevent water or dirt being drawn in, the clean oil is drawn from the top of the tank above the water head.

**High Wheel Auto Parts Company, Muncie, Ind.**—Of absorbing interest to manufacturers, or more particularly assemblers of high wheeled motor buggies or small runabouts, is the complete exhibit of this concern. The principal showing is of the "Wide Range" transmission jackshaft, which could be arranged to be used as a rear axle also. It consists of a two-speed planetary transmission arranged with a shaft encased in a tube. Intended for 10 to 18-horsepower, the sizes of the members, bearings, etc., are large enough to allow a proper margin of safety at the upper figure. Numerous other similar types are made, and the transmission and shaft can be had separately if so desired. In addition, brakes, differentials and other parts are shown.

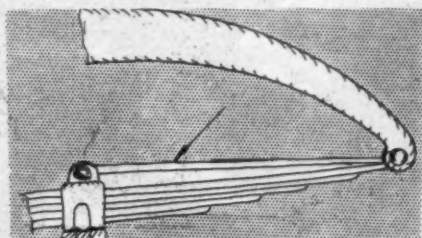
**H. & C. Bottle Mfg. Company, New York City.**—The comfort of the drinkers, hard, soft and otherwise, was carefully looked after by these manufacturers of the "Janus" vacuum bottle, when they provided a bottle that can stand an excess of hard usage without in the least endangering the glass interior. This safety is accomplished by the liberal use of rubber, the bottle proper resting upon a pad of it. The makers guarantee the strength, workmanship and durability of the "Janus" to the extent of replacing the whole or any part within sixty days of its purchase. This is the best evidence of its quality, for if it wasn't well made the makers couldn't afford to guarantee it.

**Motor Accessories Co., New York City.**—This company has on show a full line of accessories of the class now in brisk demand, and it is apparent from an inspection of the accessories offered that the wants of autoists will be well cared for in the hands of this well-known company. All the devices necessary to safely care for gasoline will be found in the list, and the M. & S. magneto is also handled by the company.

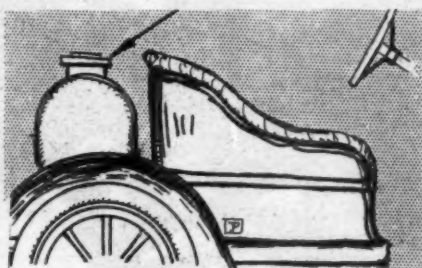
**Motsinger Device Mfg. Co., Pendleton, Ind.**—A new combination cut-out valve capable of cutting out the muffler and blowing a horn was exhibited by this concern. The housing containing it is a tubular cross, two opposite arms of which are equal in diameter to the exhaust pipe



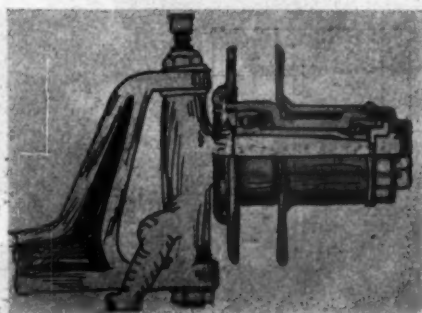
Chadwick Side Chain Boot.



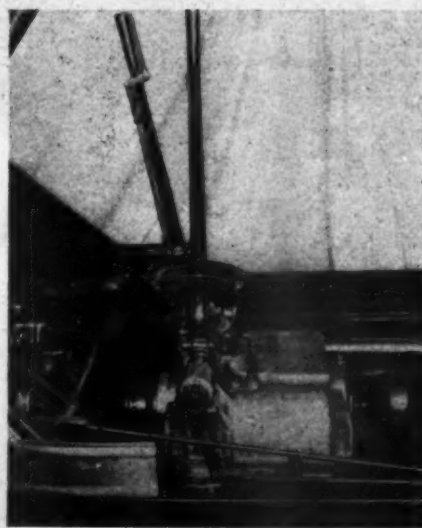
Chadwick Front Spring Spacer.



Chadwick Gasoline Tank Filler.



Hess-Bright Ball Bearing Hub.



Rockwell Removable Transmission

and threaded to be screwed into the exhaust pipe. The other arms are of different size, that for the whistle being the smaller. Guarding the entrance to these arms are sector-shaped valves rocked by two levers, permitting a separate cut-out and horn control, or both could be in operation at the same time. Also new is the switchboard used for battery charging from the Motsinger igniter. The switch has a three-fold control to allow for charging from the igniter, to run direct from the igniter, or to run from the battery.

**Raines & Co., New York City.**—The metal polish handled by Raines & Co. is displayed plentifully. In decorating its booth a huge fac-simile tin is used of its Globe liquid polish, five feet high and mounted on a pedestal surrounded by dummy tins of all sizes in both paste and liquid form.

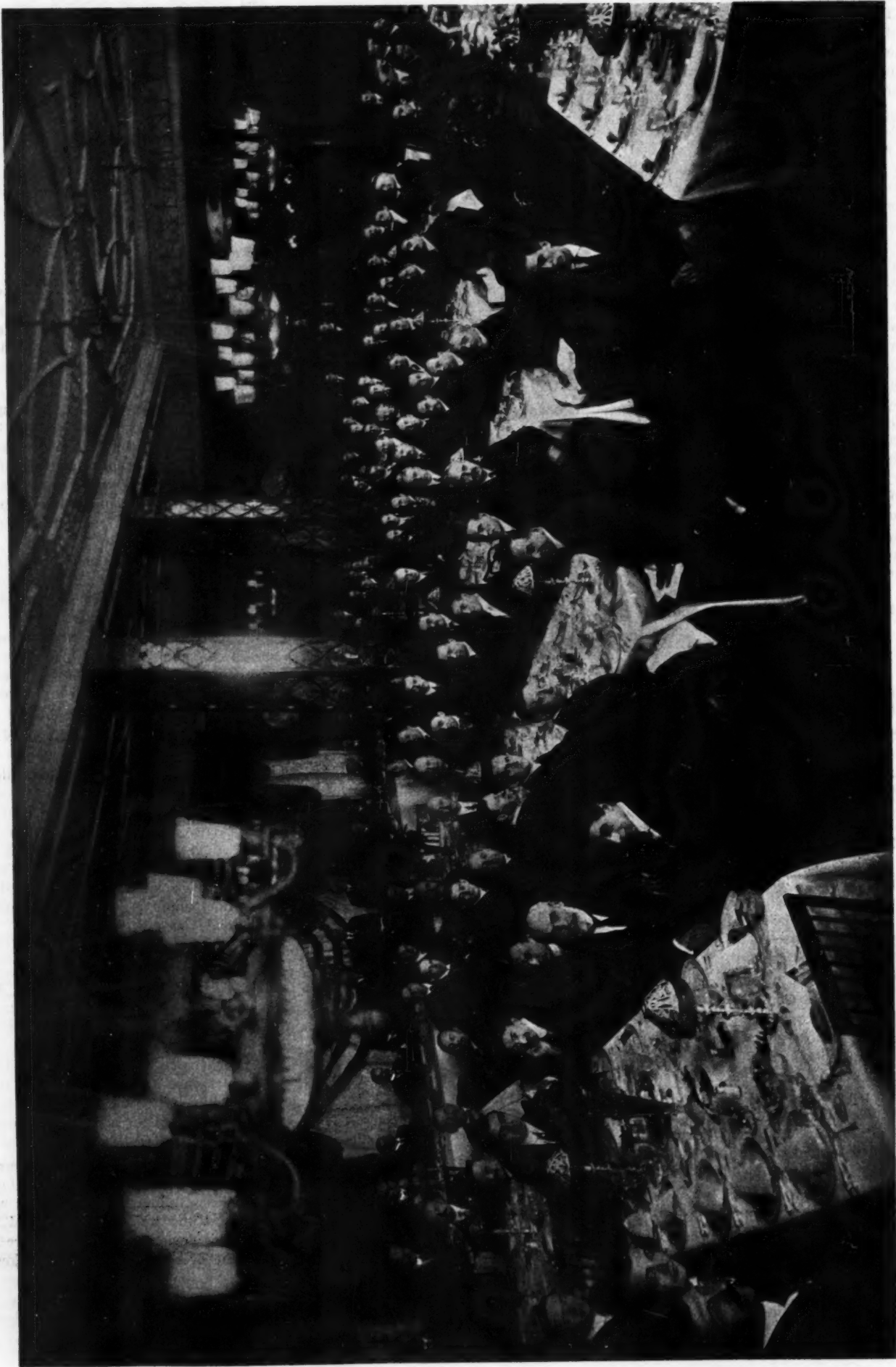
**Royal Equipment Co., Bridgeport, Conn.**—Besides the well-known brakes for automobiles, this exhibit consists of brake linings. The principal one of these is that which is known by the trade name of "Raybestos," which consists of a wire-woven asbestos tape made from the highest quality asbestos. The belting, for it assumes that form, is made in one integral part or it may be had stamped out for disc clutches, the stamping in no way disintegrating the fabric because of the copper alloy wire freely used in the weaving. Its use is economical because it does not easily burn out or carbonize under the most intense heat. The coefficient of friction is high and it wears for thousands of miles.

**John S. Wilkinson, Newburgh, N. Y.**—To thoroughly enjoy the advantages which are afforded by owning an automobile, one should have the proper clothing, especially in winter and stormy weather. This company carries a complete line of fur coats, robes, gloves, etc., which are worth looking at. The double plush robe, 54x72 inches, with a rubber inter-lining, furnished with or without muffs, is particularly adapted to automobile use.

## SPARE WHEELS

**E. T. Burrowes Co., Portland, Me.**—As a spare wheel proposition the Burrowes is one now much in use, and, contrary to the predictions of "wiseacres," the spare wheel scheme is spreading like "wildfire." The extra shoe and the tube within is protected while not in use, and when it does become necessary to change, the amount of work to be done is reduced to a minimum.

**Spare Motor Wheel Co. of America, Chicago, Ill.**—This concern, manufacturers of the well-known Stepney spare wheel, are almost too well known to need mention. This device for helping to save time, when the ever occurring tack or blow-out appears, is simply a standard clincher rim, without the hub or spokes, having four clamps for securing it to the rim holding the injured tire.



Annual Show Luncheon of the American Motor Car Manufacturers' Association, Held at the Hotel Manhattan, Tuesday Noon, January 5.

## THE ANNUAL A. M. C. M. A. SHOW LUNCHEON

**M**OST successful yet of its annual show luncheons was the usual function of the A. M. C. M. A., held Tuesday noon at the Hotel Manhattan, with covers laid for some 200 participants. Benjamin Briscoe, chairman of the association's committee of management, and H. O. Smith, chairman of the show committee, flanked Job E. Hedges, the effervescent toastmaster of the occasion. R. M. Owen, S. H. Mora, E. R. Hollander and D. J. Post were other committeemen in evidence at the speaker's table, with Alfred Reeves, the general manager, modestly seated down the line. Others at the center board were Roger B. McMullen, the former general manager of the association; H. S. White, president, and Peter S. Steenstrup, secretary, of the Motor and Accessory Manufacturers; James Couzens, former chairman of the committee of management; Robert Lee Morrell, representing the Automobile Club of America; F. H. Elliott, secretary, American Automobile Association; Jefferson deMont Thompson, ex-chairman A. A. A. Racing Board; A. R. Pardington, general manager Long Island Motor Parkway; Henry Ford, R. E. Olds, J. D. Maxwell, W. C. Marmon, W. H. Van Dervoort, G. Vernon Rogers, R. A. Parker, J. B. Prindle, Horace DeLisser, Henry M. Duncan and Marcus Nathan. Scattered about the room were many notables of the trade and sport; F. B. Hower, chairman of the A. A. A. Contest Board, being one of these.

Following the facetious introduction of Toastmaster Hedges, Chairman Briscoe indulged in a little humor himself and then developed seriousness as herewith presented:

### What Chairman Briscoe Had to Say.

I would, did it not appear vain, congratulate the entire automobile industry on the great success of this show, but just bear with me when I say, "they have got to go some to beat it." (Applause.) Surely it is, in attendance, in business interest manifested, in completeness of preparation, one of the greatest automobile shows ever held in this country. (Applause.)

Publicly I want to thank the Show Committee members, Messrs. Smith, Hollander, Post, Owen, and Mora, for the good work they have done.

I feel impelled also to voice the most universal thought held in connection with this show. I will lead up to it by saying that we all know that it is a more valuable attribute to be able to pick "good ones" than to be "good ones" yourselves, and by that token does the Committee of Management of our association shine in at least one particular, for it picked not only a "good one," but one that makes good anywhere you put him, a manager six and a half feet tall in sincerity, in judgment, in intuition, and in energy, and all else that goes to make a true, a noble, and an efficient man. Mr. Manager Reeves, on behalf of this association and on behalf of the exhibitors, I thank you most heartily.

I never participate in any gathering of men in this industry, representative of all its branches, but that I congratulate myself at being among them, and that together it has been our privilege to be the pioneers of the automobile. For this industry is even now but in its infancy, and it is we who are having its early burdens to carry and who are making the experiments and the sacrifices of pioneerhood.

In time to come, say fifty or one hundred years from now, when the apex of its development will have been reached—when the automobile will then have been so long a universal thing that those generations will not even stop to think or to be concerned about where and how it came—when we who are here now will but exist only in the memories of the oldest inhabitants, and when whatever fame we may have been possessed of may rest only as it is chronicled in the dusty and brittle pages of those few copies of the trade papers which may have perchance survived the ravages of time—then, gentlemen, where'er our spirits dwell, they may be justly proud (were such a mortal attribute still possible with them) of having dwelt within our earthly selves, and that we helped according to our ability and our inspiration in these, the early stages of the development of the automobile.

For it is good work we are doing—a worth while mission to accomplish. 'Tis true we are but plain business men, yet this particular work has been given us to do: to pioneer one of the greatest complements of civilization. The greatest economizer of time since the telephone and the telegraph; the greatest lifter of man's burdens since the steam locomotive, for truly it is, as Macaulay says: "Of all inventions, the alphabet and the printing press alone excepted, those inventions which abridge distance have done most to advance civilization."

Busy as we are, then, gentlemen, it is well for us to stop often and consider the important part that has been given to us to play in the drama of life. The more we do, the broader and less selfish men we will be, and the more and more will we grow into an appreciation of our true responsibilities, and especially of the co-operative relationship we bear toward one another.

We must not allow ourselves to think loosely of the part our neighbor plays, nor to uncharitably criticize or gossip of his works or his errors, but we must push forward, shoulder to shoulder, as pioneers should, remembering that though various are our talents, yet have we all our own particular colors to brush upon the picture, and that as our hearts and our minds are, so will that picture be of our life's work, as perfectly and as beautifully done as we ourselves may make it, and as our inheritance to posterity.

### Chairman Smith on the Show Question.

Next came H. O. Smith, chairman of the show committee, and among other things he said:

I cannot refrain from comparing this gathering with another held four years since at the Breslin Hotel, with a total attendance of four. I refer to the first meeting which had to do with the forming of the American Motor Car Manufacturers' Association; and yet if we reflect, we will see that the growth of this association has been but a few years.

While this industry has already taken a position of prominence among the first in the country, who would attempt to predict its limitations five or ten years hence? The automobile shows have unquestionably supplied their part in the great march of progress. While it is a fact that most practices employed in the modern motor car are old mechanics, being merely put to new uses, yet experience was necessary to guide the builders in determining the conditions to be met and the best way to overcome the obstacles.

The shows have proved a clearing house for ideas, until to-day, with the wonderful fundamentals characterizing each type, we can agree that we have gone far toward standardization. The shows have also had the effect of not only interesting the public in motor cars, but impressing the importance and magnitude of the industry. May I add, in conclusion, that the management feels grateful to the exhibitors, the dealers, and patrons who have contributed to the success of the Ninth International Automobile Show and made it the greatest ever held in point of attendance, general interest, and actual business transactions?

S. H. Mora, another member of the show committee, interested his hearers and told of the unsought "honors" which come to a hard working member of the show committee.

Robert Lee Morrell spoke for the Automobile Club of America, he being one of its vice-presidents. He expressed the opinion that the show was the best one of its kind the city had ever seen, despite the fact that it was the first year in which the A. C. A. had not been identified with such an exhibition. He told of the efforts of the club in desiring to better automobile conditions generally.

Henry M. Duncan supplied humor which met with considerable success at the hands of his hearers.

All around, the affair was enjoyable, with just about enough talk to satisfy those present.

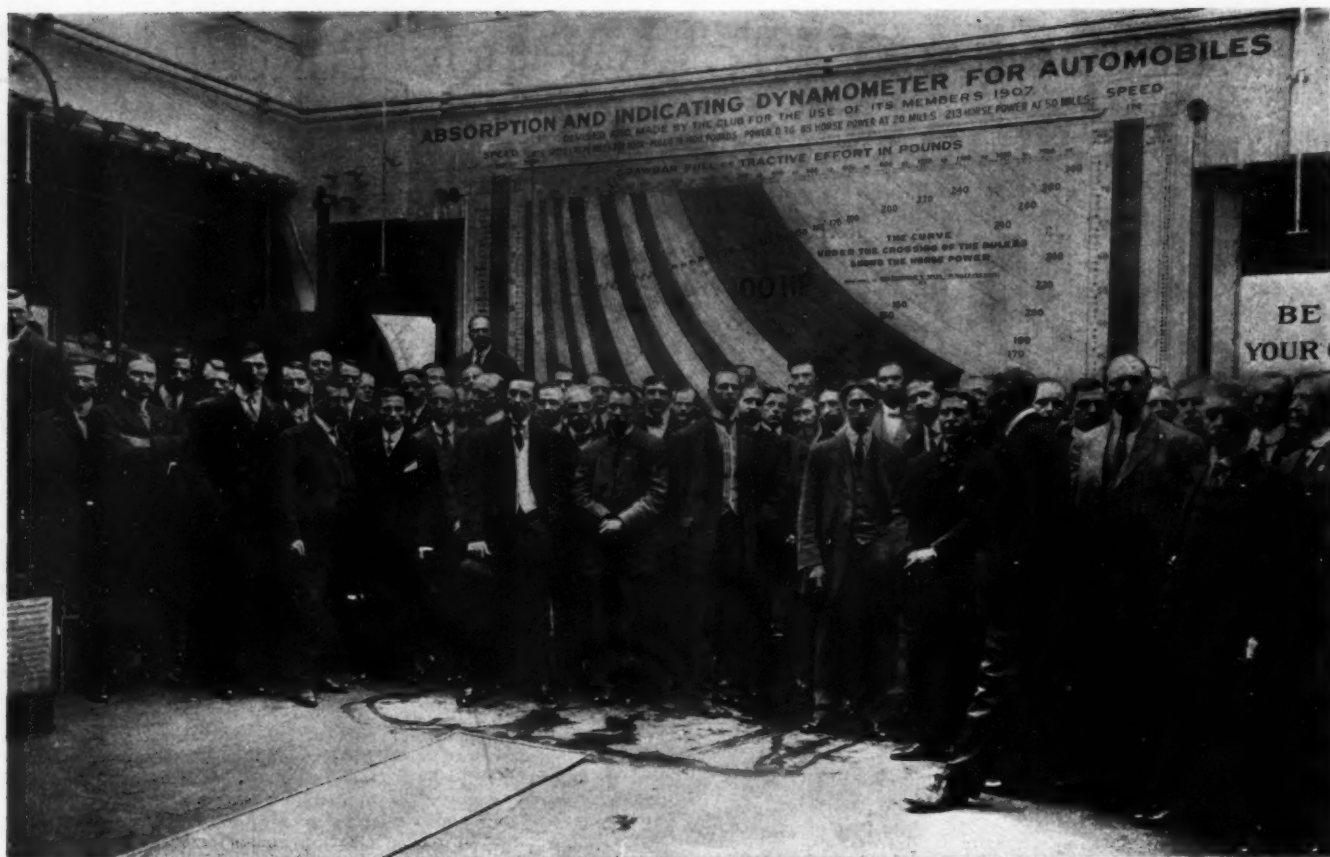
### CROSBY NOW PRESIDENT A. A. C. OF N. J.

NEWARK, N. J., Jan. 4.—The Associated Automobile Clubs of New Jersey held their annual meeting Saturday night at the clubhouse of the New Jersey Automobile and Motor Club, the election of officers resulting as follows:

President, W. Clive Crosby, of Orange; first vice-president, Walter E. Edge, of Atlantic City; second vice-president, E. H. Radel, of New Brunswick; secretary and treasurer, Horace A. Bonnell, of East Orange.

There followed a conference on the legislative situation, though nothing was announced concerning it through the usual channels of publicity. The impression prevails that some modifications of the present unsatisfactory law will be obtained before the Winter session of the legislature is over.

Besides the "trapping" abuses, the lack of reciprocity with other States in registration is the particular phase of the present law which excites the greatest antagonism.



Members of the Society of Automobile Engineers Assembled in the Dynamometer Room of the Automobile Club of America.

## AUTOMOBILE ENGINEERS MEET AND ELECT NEW OFFICERS

By CHARLES B. HAYWARD.

AT the fourth annual meeting of the Society of Automobile Engineers, held at the Automobile Club of America, Tuesday, the following officers were elected for the coming year:

President, Henry Hess, Hess-Bright Manufacturing Company, Philadelphia; first vice-president, Russell Huff, chief engineer of the Packard Motor Car Company, Detroit; second vice-president, B. D. Gray, chief engineer of the American Locomotive Company, Providence; treasurer, Allan H. Whiting, New York.

The two managers for the term of three years to fill the vacancies expiring at this meeting are David Fergusson, chief engineer of the George N. Pierce Company, Buffalo, and Prof. R. C. Carpenter, of Cornell.

Despite the unpleasant weather, the largest number of members of the society that has ever attended a meeting convened at 10 o'clock in the morning. It was the fourth annual gathering, and the prospect of having an opportunity of inspecting the club's fine dynamometer proved an attraction to many of the members from the West. By 10.30 there were 80 members on hand, and the morning session then began, with President Thos. J. Fay in the chair.

The first thing on the program was an inspection of the dynamometer, an explanation of its construction and workings being given by Henry Souther, a member of the society, and the chairman of the A. C. A. technical committee. After having detailed the operation of the various parts of the apparatus at length, a Pierce Great Arrow 6-60, 1909 model, was run upon the rollers, through the courtesy of Chief Engineer Fergusson, of the George N. Pierce Company.

Owing to the large number in attendance, which made it difficult for more than a small part of the members to observe the action of any one of the recording instruments, with the exception of the huge chart, it was deemed inadvisable to attempt to carry out a regulation test, so that after the car had

been run at various speeds and loads simply to illustrate the operation of the dynamometer as a whole, a 10-minute test on the high speed was made, the car showing 44 horsepower at a speed of 46.2 miles, the drawbar pull of 355 pounds indicating that the load applied by the hydraulic brake on the drums gave the equivalent of a grade slightly in excess of 10 per cent. The members then adjourned to the floor below for an inspection of that part of the apparatus situated below the floor on which the recording instruments are placed. This consists of the drums, the hydraulic brake, and an electric motor, all mounted upon the same shaft, which is carried on large annular ball bearings to minimize the friction losses at that point, making the error in readings on that account practically a negligible factor. The electric motor is employed to run the drums when it is desired to measure the friction losses in a car.

Following this, the members adjourned to the reception room on the main floor of the club for an informal discussion of the dynamometer and its operation, as well as the value of its records. Numerous points were taken up, but the discussion chiefly bore upon the factor of power loss due to the tires alone. Not only tires of different makes, but different tires of the same make will be responsible for varying percentages of power loss at the driving wheels, while different types of tires of the same make, such as the round and flat tread, introduce a further variable, so that the tire factor in this connection was very aptly described by Mr. Souther as a "multiple variable." It has long been well known that tires were responsible for a difference in the mileage of an electric vehicle, frequently amounting to as much as 60 per cent., where a specially light, single-tube type was employed, as compared with what is known as the regulation "gasoline" type of tire, i.e., one consisting of a separate tube and a heavy outer shoe. The use of any form of non-skid device, such as studs of any nature, is responsible for a further

increase in the power loss at the road wheels, a series of tire tests now being carried on by Mr. Souther showing that the amount absorbed at this point ranges as high as 2.5 horsepower per wheel in some cases, and drops very low in others, although as yet there has not been sufficient time to test more than a limited number of types.

It was contended by some of the members that this extreme variation in the power loss due to different tires was likely to render the dynamometer readings of very uncertain value as records of the transmission losses in a chassis, and that the only way of overcoming this would be to mount the same tires successively on the rear wheels of the cars under test in order to obtain a constant. But a further difficulty crops up there in that the wheel diameters vary and that this introduces a further variable in that the loss is decreased with the increasing diameter of the wheel, besides being altered by differences in the cross section of the tire.

The discussion was very general, and during the course of an hour or more a great many points of interest were brought out in connection with tests on the club dynamometer, as well as with regard to tests generally. Owing to the temporarily enforced absence of Mr. Souther, his assistant, Mr. Chase, took his place in the discussion.

An adjournment was had for lunch about 1 P. M., which was served at the club, and immediately upon the conclusion of this the business meeting was called to order by President Fay. The report of the finance committee for the previous year was then read by the treasurer, Henry Hess. It showed the society to be in a most prosperous condition, its income for 1908 being close to \$8,000, whereas for 1907 it was less than \$1,500.

In the absence of the chairman of the membership committee, the report of the latter was read by Secretary Hayward, and it revealed a correspondingly great amount of progress, the membership having jumped from 116 at the end of 1907 to 280 at the close of the past year.

The report of Chairman P. M. Heldt, of the committee on professional papers, was also read by the secretary. During the past year no less than 19 papers have been prepared and read at the four quarterly meetings, but difficulty has frequently been experienced in getting them ready on time, due to members either not fulfilling their promises to supply copy and illustrations at a certain date, or, what has been equally frequent, not at all. This was followed by the report of the secretary, giving a general résumé of the activities of the society during the year just past, and dwelling particularly upon the establishment of the society's employment bureau. Considerable attention was also devoted to the matter of a more generous response to the call for papers than has hitherto been the case, the suggestion of Mr. Heldt that it be made a feature of the dinners held in connection with the society meetings to call for suggestions for new papers being heartily seconded. The reports of the various committees were approved as read, and it was decided that they be published in the following issue of the transactions.

President Fay then appointed Joseph Tracy chief teller of election, with Alexander Churchward, Henri G. Chatain, A. Bergman and J. G. Crowley as assistant tellers, to count the ballots cast for the nominees for offices falling vacant at the fourth annual meeting. Mr. Tracy announced that a total of 88 ballots was cast, of which five were void, the remainder being straight tickets, so that the election was unanimous.

President Hess then took the chair, and the paper on "The Modern Trend of Brake Design," by Lawrence Whitcomb and Thomas J. Fay, was read by Mr. Fay. A number of interesting points were brought out in the discussion, which lasted considerably more than an hour.

"What Constitutes Ignition Reliability," by A. Atwater Kent, was then read by the author, and during the course of the reading of his paper Mr. Kent illustrated, by means of an apparatus which he had constructed for the purpose, a number of the points dwelt upon in his paper, showing in a striking manner the contrast between the duration of the contact dwell of the ordinary form of roller timer and that of the Atwater Kent

contact maker, as well as the lag at various speeds. A lively discussion ensued, and, as is always the case where the subject of ignition comes up, many questions of general interest apart from the subject as treated by the paper were brought up. Chief among these was that of the advantage of a fixed point of ignition, as compared with provision for advancing or retarding the time of ignition, a paper being promised on this subject for the first quarterly meeting of 1909 at Boston.

At 7 P. M. the members sat down to the annual dinner of the society, which was served by the Automobile Club, and upon the conclusion of this an adjournment was taken to Tuesday, January 19. A vote of thanks was tendered the club for its hospitality.

On that date members will again meet at the Automobile Club at 10 A. M. for a session with the club dynamometer, following which the technical sessions will be held in the Engineering Societies' Building, in Thirty-ninth street. The papers to be read are: "The Economics of Weight Reduction," by F. D. Howe; "An Improved Type of Compression Coupling," by W. S. Noyes; "Standardizing Motor Bearings," by S. P. Wetherill, Jr.; "Some Practical Considerations in Autogenous Welding," by Henry Cave, and "An Indicator with Continuously Rotating Drum," by S. W. Rushmore and H. L. Towle.

Among those present as shown by the register were: A. Atwater Kent, E. T. Birdsall, A. L. Riker, H. M. Swetland, David Ferguson, Thos. J. Fay, Lawrence Whitcomb, Henry Hess, Prof. R. C. Carpenter, Prof. F. R. Hutton, H. Vanderbeek, A. H. Raymond, Ernest L. Smith, René M. Petard, Amasa Trowbridge, Chester E. Clemens, Charles B. Kirkham, H. H. Brown, Louis M. Pawlett, Henri G. Chatain, H. F. Donaldson, Henry Souther, Alanson P. Brush, J. W. Bate, Joseph Tracy, J. A. Anglada, Alexander Churchward, H. L. Towle, Dempster M. Smith, Charles Cuno, George C. McMullen, Charles E. Reddig, W. R. Hudson, C. E. Davies, B. D. Gray, Lindley D. Hubbell, Julian Chase, M. R. Hutchinson, W. B. Hasselkus, Al C. Bergman, Frederick Charavay, E. S. Foljambe, Marcel de Jarny, E. W. Winans, B. G. von Rottweiler, A. L. McMurtry, Raymond Cilley, M. S. Young, Henry Cave, H. K. Holsman, R. E. Northway, Ernest Wilcox, W. G. Wall, W. T. Powers, William Herreshoff, Clarence E. Whitney, R. S. McLaughlin, P. M. Heldt, J. G. Crowley, M. C. Krarup, E. F. Schnuck, C. B. Hayward and a number of guests.

### SILENT KNIGHT IS COMING HOME.

Within a fortnight it is expected that one of the new Daimler demonstrating automobiles will arrive in America, and the fraternity will have a chance to gaze upon the latest phase of the "Silent Knight" motor, as it is now being used in Daimler cars. One of the make is now in the country in the hands of a private owner. D. W. Whitford, until recently connected with Palmer & Singer Company, but now associated with K. Mandell, of K. Mandell & Company, exporters and importers, at 79 Worth street, New York City, is to manage the agency. While the Knight motor will be the "novelty" in the 1909 British Daimler, the fact that wire wheels are used will attract more than a little attention in this country. As respects the Knight motor, it will be remembered that it is an American invention that drifted across, after a trial here that did not seem to make a commercial go of it. Some changes have been made.

### WRIGHT HOPES TO SAIL FOR FOUR HOURS.

LE MANS, France, Jan. 2.—Wilbur Wright gave his last airship demonstration here to-day, carrying with him in four different flights members of the Aero Club of Sarthe. Mr. Wright is preparing to proceed to Pau, where he will remain a month, giving instructions as to the handling of his machine. He then goes to the United States.

Mr. Wright said to-day that he expected at an early date to fly for more than four hours, and from 125 to 150 miles, by the use of new motors.

## GENERAL GOSSIP OF THE PALACE SHOW

**The First Automobile.**—The old steamboat shown at the Maxwell-Briscoe commercial space caused many people to remark: "What is that old thing?" Now, it seems that the remark, particularly the "old" portion of it, was in good form, for this car was built in San Francisco in 1876 by a Mr. Wilkins. It is believed by the present owners, the Maxwell-Briscoe Motor Company, that this was the first gas-propelled vehicle ever built. As shown on another page, it will be seen to resemble closely the modern high-wheeler or motor buggy, with the exception perhaps of the "blinds" in front and the three seats.

**Typographical Error.**—In our large show issue of December 31, an error in the advertising of George A. Haws, manufacturer of the well-known Panhard oil, "put up in the checker-board can," made it appear that this lubricant has been on the market since 1903, when the fact is that it was not produced until November, 1904.

**Holsman Entertains Its Agents.**—The Holsman agents in attendance at the show were entertained at a Sunday dinner at the Hotel Knickerbocker by the Holsman Company. Plans and policies for 1909 were outlined, and the new 26-horsepower, four-cylinder, all ball and bearing motor, was thoroughly discussed. This motor has aroused a remarkable interest among visiting agents and prospective purchasers.

**Moon Very Busy.**—The press of business at the Moon Motor Car Company's factory, at St. Louis, was so great that Stewart McDonald, vice-president and general manager, was unable to get away for the Palace show. New agencies, particularly in the Southwest, are so urgent that the factory must be pressed to its fullest capacity, and "Mac" had to stay home and do the pressing.

**The A. A. A. Tour to Be in July.**—Chairman F. B. Hower, of the contest committee of the American Automobile Association, announced Tuesday that the entry list for the 1909 A. A. A. tour, which includes the contests for the Glidden and Hower trophies, is now open and that the date of the start would be some time during the week beginning July 5. Chairman Hower and Secretary D. H. Lewis were visitors at the A. M. C. M. A. show in the Palace, but would give no information concerning the route or any further particulars of the tour. A fee of \$200 will be charged for cars entered prior to May 15, and \$300 thereafter until June 15, when the entry list will be closed. The temporary blank calls upon the entrant to state whether his machine is a touring or roadster type and the style of body, also whether it is entered for the trophy certificate or in the non-contestant class. An inventory of all parts carried must be furnished in addition.

**Cork Inserts on the Job.**—The Premier Century car, of which so much has been heard in the past half year, is at the show, and from all appearances and reports is ready at a moment's notice to repeat its 1908 century and other performances. This car's brakes are fitted with the cork inserts of the National Brake & Clutch Company, Boston, and it was the verdict of the judges who examined the car at the end of the century-a-day-for-a-hundred-days' performance that these brakes merely showed that they had been in use, so little did the cork inserts show the evidences of that furious test.

### FRANCE WILL NOT HAVE ITS GRAND PRIX.

According to private information received this week from the Automobile Club of France, a sufficient number of entries have not been secured for the Grand Prix, scheduled to be run in the Château country in July. Only nine actual entries were made when the minimum required by the club was placed at thirty. Therefore, there will be no Grand Prix, and probably no Circuit des Ardennes and no Florio Cup race. Exactly what will happen now in foreign automobile racing remains to be seen.

**American Automobile Association, 437 Fifth Avenue, New York.**—The booth of the A. A. A. was a rendezvous for visiting autoists from all parts of the country, the information sought in the majority of instances naturally being that concerning the holding of the annual "three A" tour for the Glidden and Hower trophies this Summer. Secretary Elliot was in charge to answer questions regarding the advantages of being an A. A. A. member, and numerous applications were received. Numerous pamphlets detailing the varied activities of the association were distributed.

**Automobile Club of America, West Fifty-fourth Street, New York.**—The club devoted its exhibit at the show, which is the first in which it has not participated in a managerial capacity, to the work of its touring bureau, of which Waldron Williams is the chairman. The bureau is actually in charge of A. L. Westgard.

**National Retail Automobile Dealers' Association, Oshkosh, Wis.**—One of the meetings held during the course of the show was that of the new organization of retail automobile dealers, which first came into existence during the Chicago show last year. The objects of the association are to better the conditions of its members generally and to place them on a better footing with the manufacturers, and the subjects discussed at the meeting were entirely on lines such as discounts, methods of selling, demonstrating cars, and the like.

**International School of Aeronautics, Morris Park, N. Y.**—There have been few shows which have not been productive of some entirely new form of exhibit as the result of developments either in automobiling or in lines associated with it, and the show at the Palace proved no exception, as may be seen from the present instance. Naturally such a school would not have a great deal to exhibit, apart from apparatus and photos of ascensions, but it was an interesting spot for a large number of visitors.

**Big Smoker at the A. C. A.**—Probably what was the largest crowd ever assembled in the home of the Automobile Club of America was that which attended the show smoker of Saturday evening last. The big assembly hall was filled to suffocation, and the smoke was so thick that it could be cut with a dull knife. Chairman Orrel A. Parker, of the club's entertainment committee, provided satisfactory enjoyment for those present.

**The Assistant of the General Manager.**—First the A. M. C. M. A. had to find a good general manager. Alfred Reeves got the job. Then the general manager needed a good right-hand man. Lee Myron Bradley secured the place. That he fills it exceptionally well has been apparent to all those who have come in contact with him before and during the show. Once upon a time he lived in Providence, and he is an ex-newspaper man.

**Humphreys, Editor "The Missing Spark."**—There's a very conservative and excellent paper called the *New York Evening Post*. It doesn't give its automobile expert any vast amount of space for his gossip of the industry and sport. Therefore, Major Humphreys periodically issues *The Missing Spark*, wherein he gives personal attention to his friends in scintillating paragraphs.

### FINAL PLANS FOR BUFFALO SHOW.

**BUFFALO, Jan. 6.**—The 1909 directors of the Automobile Club of Buffalo held a meeting yesterday afternoon, at which the 1909 Buffalo Automobile Show question was definitely settled. It is to be run by the Automobile Club of Buffalo, the week of March 1. The Buffalo Automobile Trade Association has been given the privilege of appointing one of its members, the trade interests outside to appoint another one, and the two to appoint a third person to form a committee of three.



Duryea Gasoline Buggy of 1893.

Single-cylinder friction transmission, electric ignition, spray carbureter, one-hand central control.

Winner Chicago "Times-Herald" Contest.

Two-cylinder, double gear drive, individual clutches, three speeds forward and reverse, artillery wheels.

Duryea Buggy about, 1909 Pattern.

Two-cylinder, two-cycle, air-cooled, fitted with Duryea grooved roller drive.

## AS IT WAS IN THE BEGINNING

By CHARLES E. DURYEA.

“WHAT started the demand for automobiles, and who first attempted to fill it?” Quite a natural question, but it is based on a misapprehension. Radical things are never demanded. Improvements are sometimes asked for, but the really great steps in advance are usually so far ahead of the public that they decry rather than ask for them. The first Jacquard looms were destroyed; harvesting machines burned in the fields; the telephone was laughed at as a funny toy; and the power vehicle, “Pooh! I prefer to drive something with life.”

Such was the feeling of the public toward a self-propelled buggy during the '80s, when I was considering it most carefully. The idea was not a new one. It ran back beyond the dawn of history. Homer describes Vulcan's work for one day as “a full score of wheeled tripods, spirit moved.” Many a modern factory would be proud of such an output. Time and again the problem was essayed by some venturesome mechanic or engineer, only to end in ridicule and failure.

About a century ago, when the new steam engine was being developed, many attempts at self-propulsion were made, and from 1820 to 1844 motor passenger vehicles and stage coaches were much used in England and carried thousands of passengers. The advent of the locomotive and restrictive laws drove the auto out of existence there, and left it for Germany, France and America to revive 50 years later.

With the expiration of the Otto patents on the four-cycle engine in 1886 there began a great advance in this type, and some very light ones were produced by Daimler and Benz in Germany and taken up by French makers in the early '90s and pushed so vigorously that all the world took notice.

About this same time I concluded the public would be ready to accept a power buggy by the time one could be perfected, and in 1891 I began work on a simple design, which followed horse buggy lines as closely as possible. It was my thought that a buggy which ate no oats and caused no expense when not in use could be sold to people unable to afford horses, and that the more closely it copied the horse buggy the better. A driver of horses during all my early life, I too, felt the love of the animal and did not believe that any one able to have the horse-drawn vehicle would care to use the machine. But I expected the low price and maintenance cost to go far toward creating a demand.

The first one, finished in 1892, was, like all first attempts, underpowered and given very little service; and so careful was I to avoid any more charges of lunacy than necessary, that it was not shown to many and was not photographed. It was partly rebuilt, and then abandoned to build an entire new rig, which was completed in September, 1893. This is shown in the accompanying photo and was finished before the product of any other

present-day American maker had been begun. It ran many miles and opened a new era. It demonstrated that the power vehicle was superior to a horse-drawn one and that the market desired could be created among the wealthy if the product was superior. It was entered for exhibition at the Chicago World's Fair, but not exhibited because it was not the future immediate type.

Its successor, begun in the winter of 1893-4, was finished in the Fall of 1894 and was a modern automobile in that it had multiple cylinders, three speeds forward and reverse, transmission by gears, pneumatic tires, artillery hubs, water tank in front, engine shaft lengthwise the vehicle, throttle control, spray carbureter, electric ignition and many similar features, some of which its predecessor did not have. After a successful service during the summer of 1895, it was entered in the first auto event in America, the *Times-Herald* race at Chicago, on Thanksgiving Day, November 25, 1895.

This contest was an attempt to duplicate over the vile roads of America the splendid successes which the power vehicles of France had shown in a French race in June of the same year. Prizes amounting to \$5,000 were offered and 83 entries secured. But the American winter was perverse and an unusual blizzard had buried the roads beneath 18 inches of snow, which on the morning of the race was covered with a frozen crust on which pedestrians walked and sleighs glided, while horses and heavier vehicles cut through. No wonder that but seven started in the face of this, and it is great wonder that any got through; but the Duryea won (first prize \$2,000) and was the only vehicle to finish without being pushed or towed and the only one to leave and return to its garage under its own power.

The best German and French vehicles were entered, but only one, a Benz, was able to get through, winning the second prize. The prize winner was used for a year or so as a demonstrator, and then sold for \$1,000 at second-hand and gave its buyer good service, a clear proof of the superiority of American autos even at that date. Its neat and graceful lines, as shown in the photo herewith, would not make it look out of place among some of the high-grade electrics of to-day.

But skeptical buyers could see no good at home. The faults of the foreign cars were not visible. And the gasoline car could not win popularity on its own soil. Foreign makers said, “We were beaten by the weather.”

So when the first British run was announced, a Duryea rig took its position well to the rear of nearly thirty entries, including the three leading vehicles in the great French race of 1896 and the drivers that had run them to victory. The distance to Brighton was 52 miles, and the Duryea covered this so quickly

that it was ahead of the judges and assumed not to be in the race, having beaten the next vehicle by about an hour. This happened November 14, 1896, in the "Liberty day Run," held to celebrate the legal victory which undid the oppressive law of 1844.

For years this unique victory of an American auto over foreigners on their own soil was the only instance of its kind, but not till American buyers and makers had gotten their fill of toy steamers and such follies could the gasoline vehicle come into its own. And even then it was necessary to go abroad for designs. Such is the peculiarity of human nature.

And the end is not yet. That vehicle which meets the needs of wealthy tourists in Europe is not the one for the great American masses. Thousands of small copies well made and very capable are being sold, but slowly the American public are learning by experience that their daily needs can be better served by reversion to the original type. The prejudice against power vehicles has been largely broken, the sanction of the leading classes has been gained, the auto has won its spurs and proven its ability at all seasons of the year.

The 34-inch and 38-inch wheels of the "London to Brighton" winner find their counterparts on nearly all the better autos at

the 1909 auto shows, and one really wonders, "Why the small wheels of five years ago?" The absence of single cylinders suggests that the Chicago winner and its successors ought to have been followed. Other features could be mentioned, but the question is, "What is the lesson?" Simply this: The needs of the masses who could not afford horse-drawn vehicles in 1891 are still unsupplied in 1909. The masses to-day are rapidly beginning to demand the motor buggy or some power vehicle which will take the place of the horse vehicle so largely used. The conventional auto has required the most expensive selling machinery ever utilized to market any product, but as the public become convinced of the economy of the motor buggy, the demand will rapidly grow and the foresight of the prophets of 15 years ago will be fully vindicated in the very near future.

The number of motor buggies now being offered is rapidly increasing, some of them are extremely simple and therefore almost certainly free from trouble. They are light in weight, economical in fuel, easy on tires and for speeds below 20 miles per hour are extremely satisfactory. They may be accepted as a very proper reversion to the original type in mind when the first autos were constructed.

## CONCERNING NOISE AND ITS AVOIDANCE

By C. H. TANGEMAN.

"**K**NOWLEDGE" applied to automobile construction is the ability to design a chassis in which those features of construction that tend to noise are ingeniously dealt with, and the ability to assemble the parts of the motor and transmission in a manner which tends to produce the least noise.

In a car where construction details include the elimination of noise, as in the case of such cars as the Lancia, which we happen to handle, there are practically only two details to be considered: First, the motor; second, the transmission. In the motor are the valve lifts, which, actuated by camshafts, strike and then lift the valve from its seat. It can readily be understood how this process of striking of the valve stem, as with a hammer, produces noise. This can be eradicated only by reducing the blow to a minimum. In the Lancia this is accomplished by timing the valve lifts so that there is virtually no lost motion between the lift and valve stem. In a chassis recently arrived from Europe we found that even the thickness of a single sheet of cigarette (tissue) paper cannot be introduced between these two parts. When the lift, therefore, rises and strikes the valve stem, it has not as yet attained a great speed, as the cam is only commencing its lift; the blow is therefore very light and the noise consequently reduced to a minimum. As an illustration of the foregoing, try striking a nail with a hammer. When the hammer is held only an inch from the head of the nail less

noise will result upon striking than when held a foot or more away and the nail then struck from that distance.

The only other noise connected with the motor is that of the exhaust gas. This subject, which must be carefully considered in designing the exhaust piping and muffler, is one which in the Lancia has been very satisfactorily treated, resulting in an exhaust pipe of unusually large size in a muffler much larger than has heretofore been considered necessary for a motor of the dimensions employed. The gas, therefore, expands freely and rapidly, and by the time it is discharged into the atmosphere the noise has been muffled or deadened by its extreme expansion. I do not believe that in any motor the noise caused by the explosion within the cylinders is heard by the riders in the car, or even by people passed along the road, except the motor is of very high compression and then it can only be heard when the car is at a standstill and the bonnet opened.

Taking up the transmission of the car, which is the only remaining source of noise, I contend that it is merely a matter of proper design, assembly and finish to overcome all noise.

There is no "trick" employed in attaining this most sought-for feature. It is merely knowledge of the causes of noise and then the ability to reduce it to a minimum. Absolute silence is an impossibility in the present practice of the art, but each year we acquire more knowledge and greater ability.

## COL. CLIFTON ON THE RECENT PARIS SALON

"**A**S a demonstration of the discrimination of the American automobile buyer, the Salon was a marked success," in the opinion of Charles Clifton, of the George N. Pierce Company, Buffalo. Col. Clifton attended the annual exhibition at Paris and has just returned home.

"Ever since automobiles were first manufactured in Europe," Col. Clifton says, "the makers of France particularly, and Germany and Italy to a great extent, have depended on England and the United States for a market for a large part of their product. This foreign trade has encouraged them to make advances in construction and bring out new ideas. But this country and England have progressed now to a point where our practices are, at least, on a par with continental Europe. Discriminating buyers have come to realize that the car built in this country is suited best to the needs of this country. He realizes, too, that his American-made car answers his purpose in Europe

as well as any European-made car. The consequence is that the encouragement they received formerly has been taken from the makers of France, Germany and Italy. Little has been done by way of improving their cars and bringing out new models.

"It would not have paid the automobile enthusiast to visit the Salon this year with the sole view of seeing new models. There have been no radical or even pronounced changes in construction. The automobile designer would have found less to interest him than at any previous Salon, although there were matters that would have caught his attention. These were principally in the way of new materials for certain parts and improvements in accessories.

"Altogether the Paris Salon gave the impression of being a striking illustration of the trend of American buying—the fact that the people of the United States are now buying cars made in their own country."

# Matheson Gets Three Out of Four in Quaker Club Run

BY G. M. SCHELL.

PHILADELPHIA, Jan. 4.—

If Friday's and Saturday's performance of the contenders in the third annual New Year's run of the Quaker City Motor Club means anything, 1909 will be a Matheson year. Under conditions which precluded the possibility of all-round clean scores, the three Matheson entries finished 1-3-4; the Franklin "28," driven by C. S. Carris, capturing second place. A pair of Cadillac "30's," driven respectively by Edward Burnshaw and William Crawford, finished fifth and sixth—noteworthy performances, both of them.

The last-named car was the winner of the \$500 side wager with the Class B Maxwell 24-28, driven by William Longstreth, the terms of the bet being that any car listed at \$2,000 or under that would have a lower score than the Maxwell should scoop the pot. The Cadillac-lackers called the defi, put up their \$500, and suffered but 139 demerits, as against the 528 chalked up against the Maxwell. The winning car was F. M. Kirby's 45-50 Matheson, and the 11 points penalty was made up of one observer's demerit and 10 inflicted by the technical committee. Aside from this one point, which was garnered on the second day, the road work of the Matheson trio was perfect, the other demerits being made up of faults found by Chairman Swain's technical sharps.

Class B honors went to "Bill" Reuss's Peerless "30," a private car, as was also the winning machine in Class A.

The high totals in the checkers' penalty column are due entirely to Pennsylvania's icy mountains, and the bulk of them were accumulated almost before the contestants had a chance to warm up after the start from Wilkes-Barre. It was the famous old Giant's Despair which claimed victim after victim, and put them so far behind that each succeeding control only added to the totals of points. Some of the contestants, disgusted with their positions, failed to turn in cards, and came right through regardless of schedules. Others played the game out to the limit, took their medicine like little men, letting the points pile up as they might. Giant's Despair certainly took a cruel revenge for its Memorial Day buffet-



First - Peerless Runabout



Second - Maxwell Runabout

ings of past years. Some of the cars unloaded their passengers to reach the top, and were disqualified therefor. Others hunted up block and tackle, or made a path of robes to secure traction on the slippery surface.

But one car submitted to the technical committee came out unscathed—the Premier, driven by Roy McNamara. It is understood that the failure to consider that car's performance was due to the unloading of the car in order to reach the top of Giant's Despair. The Studebaker, the Franklin, the Oldsmobiles were among other cars which were penalized but lightly by the technical committee. The Stoddard Dayton's road and observer's penalties were due entirely to running shy of water in the radiator and the consequent delay in procuring the necessary aqueous in a houseless mountain district. The hot engine was responsible for some of the technical demerits. A succession of exasperating tire troubles was responsible for the accumulation of 648 checker's penalties by Frank Yerger's Studebaker "30," which had the fewest technical penalties of any of the cars which officially finished.

Considering the difficulties of the route, and the exceptionally adverse conditions, the almost utter absence of vital breaks—apart from those resulting from collisions—was little short of wonderful. Without exception, all the spills and collisions were due to the coating of ice which covered the hills, and which made the negotiation of turns at even medium speed a dangerous proceeding. The result can only be considered a triumph for American automobiles, for never were conditions worse for an endurance contest. Men and cars suffered alike. "Whisker coats" in many cases failed to keep their wearers warm in the frigid air and with a 20-mile head wind from the northwest, and on the last control of the first day a sharp snowstorm for an hour or so. Frozen cheeks and toes—not to mention bad cases of "cold feet" when cars began to slide backward on the mountain roads—were complained of here and there. It was a sure endurance run.

On the theory that "misery loves company," the colossus after whom

Senator Morgan named the Wilkes-Barre mountain road must have chuckled to himself as he witnessed the difficulties encountered by the 25 contestants remaining from the original field of 31 starters shortly after the start of the second day's trip. The surface of the steep and winding way was a sheet of hard, glassy ice, into which chains and anti-skids could not penetrate sufficiently deep to afford a firm hold for traction. The Wilkes-Barre Automobile Club had caused a few barrels of ashes to be scattered here and there on the turns. The straights were allowed to remain as the combination of a stiff grade, a six-inch snowfall followed by a thawing rain and then by a hard freeze had made them when the contestants tobogganned down the mountain the previous afternoon—perhaps that exhilarating sleigh ride had made Giant's Despair a trifle slipperier, if possible.

The route out of Wilkes-Barre toward Hazleton, the first control, led directly up the mountain, and the first indication of what was coming to them was given the contestants when they heard that "Doc" Overpeck, in the Mitchell pilot car, finding he was ripping the chains off his wheels, and that his load of confetti was not sufficiently heavy to give his car traction, sidestepped the hill and sped Hazletonward over the much more practicable boulevard route. The contestants, however, could not follow the pilot's example; they were compelled to adhere to the official route or suffer disqualification. Cadillacs Nos. 2 and 3 had a slight advantage, and by picking the rough places here and there managed to reach the top after much difficulty. No. 4, a six-cylinder 45-horsepower Acme, was driven by Al. McCormick, and he had figured it out that his best chance lay in "rushing" the hill. His plan was working to perfection until, when two-thirds of the way up, he overtook Cadillac No. 3, which was creeping up as best it could, picking the rough going on either side of the road. Of course, McCormick had to slow down, for there was no room to pass. As the Acme lost way the rear wheels began to slip, and in a few moments the car was sliding backwards down the hill. Quickly a sprag was dropped, which held the car, but at each attempt to go forward the chains did nothing more than wear a pair of polished grooves in the hard ice as they whirled around. The crews of the Matheson, Nos. 6 and 7, immediately behind the Acme, knew the mountain thoroughly, and after sizing up the situation figured it out that they could just squeeze past the panting Acme by taking a chance; they took it, and won out. Shirk, in Stoddard-Dayton, No. 8, tried the same trick, but couldn't get around, and dropped back. Then a collection of robes was taken up from the string of stalled cars, and by pushing and pulling, and filling up the tonneau of the Acme with bystanders to put weight on the rear of the car, in order to make the chains "bite," the road was finally cleared. Those cars which were blocked on the stiffest grade were compelled to drop back to a place where they could get a chance to get up a little headway. It was a good hour and a half before the last car had mastered the icy slope. Despite the 15-degree temperature, the air was kept warm with imprecations, and it will be many a long day ere the memory of that early morning struggle with the slopes of Giant's Despair and Jack Frost fades from the memory of the participants.

In this connection it is proper to point out that the contest committee, a few days before the run, had inserted a new rule in the regulations governing the contest, allowing time to any car which might be compelled to stop owing to being blocked on a narrow road by another car in distress. The Acmeites claim that they were so blocked by the Cadillacs; that they had ample power, as witness the overloading of the tonneau to get traction. Those behind the Acme claim the latter was stalled, and some of the latter, when they tried to go forward, found it impossible to do so for awhile, and they came in for blame from those behind them. It was a case of "every fellow could have gone up easily if the fellow ahead of him hadn't stalled." The shower of protests hurled at the contest committee at the finish gave that body many hours of earnest discussion, which lasted well over into Sunday, and a decision was not made in time for the morning papers to publish the results.

Another knotty problem that the committee was compelled to solve was whether in case of a tie an engine stop of 30 seconds should be given a win over a similar stop of 45 seconds—observers' reports turned in at the end of the first day brought up the question. The rules say that a one-point penalty shall be inflicted for each such stop or fraction of a minute it continues. Another mix-up came as a result of the adoption of a schedule wherein the 20-mile-an-hour basis was reckoned out in the hours, minutes and seconds. The Cram and Freitag Mitchells, Nos. 9 and 10, claimed to have lost clean scores the first day by adhering to the printed schedule, while the finish officials were ignoring the odd seconds. No. 10 was given one demerit for crossing the finish line the fraction of a minute to the bad, whereas if they had been allowed the odd seconds the Mitchellites claim they would have finished clean.

A combination of unforeseen circumstances resulted in a dearth of accommodations for pressmen on the run, and as a result there was a rush for the 8:30 express as soon as the last Class B car had been sent away from the Hotel Walton at 8:02 A. M. The officials and the Fourth Estate men quite filled the only Pullman, and on arriving at Wilkes-Barre at 10 o'clock "The Automobile" representative and a photographer stole a march on the others by securing a Matheson tester and beating it for the Mountain House to snap the cars coming down Giant's Despair. After the pilots the first two to strike the toboggan were the Matheson duo, Nos. 6A and 7A. From the porch of the Mountain House could be heard the cannon shots which welcomed their arrival at the hotel a few minutes later. Wilkes-Barre is certainly loyal to its own.

The tenderness with which most of the drivers tackled the descent of the crack hill-climbing course was remarked upon by the dozen shivering enthusiasts gathered at the windy lookout. The Mathesonites evidently knew their ground, for confidence was written on their frozen faces as they swung and skidded around the turns at a fair rate of speed. Out-of-towners felt their way cautiously. The observer in Mitchell No. 9, which slid down toward the Mountain House with wheels locked, lost his nerve and jumped from the car, and a couple of minutes were lost before he could be induced to get aboard again and continue the journey. No. 9 was penalized about that much at the finish for late arrival. Rambler No. 19 (Class A) began to coast with rear wheels set, all hands meanwhile looking as if they were prepared to jump. At the same time the car began to swing round, and, after making a full revolution and a half, stopped with front wheels in the ditch, completely blocking the road for the following car, which came within an ace of ramming the Rambler. Berger's 42-inch-wheeled Oldsmobile No. 23 (Class A) next in order took to the ditch to avoid a collision, and got into such a bad position that fully 15 minutes were lost getting the car back onto the toboggan again. Some of the rear cars came down the mountain after dark, but just how they did it they couldn't tell themselves. Joe Keir, who followed the run in an 18-horsepower Autocar truck loaded with Ajax tires, declares it came down sidewise and backward. It was 9:30 at night, and the only things to be seen were the lights of Wilkes-Barre down below.

Following is the schedule, showing the distances between controls and the time allowances:

FIRST DAY.				
	Miles.	Time.	Total Miles.	Total Time.
Philadelphia to Sellersville.....	33.3	1:39:54		
Sellersville to Allentown.....	21.0	1:03:00	54.3	2:42:54
Allentown to Stroudsburg.....	49.9	2:29:42	104.2	5:12:36
Stroudsburg to Wilkes-Barre.....	50.1	2:30:18	154.3	7:42:54
SECOND DAY.				
	Miles.	Time.	Total Miles.	Total Time.
Wilkes-Barre to Hazleton.....	36.9	1:50:42		
Hazleton to Hamburg.....	35.0	1:45:00	71.9	3:35:42
Hamburg to Reading.....	16.2	:48:36	88.1	4:24:18
Reading to Pottstown.....	16.7	:50:06	104.8	5:14:24
Pottstown to Norristown.....	19.3	:57:54	124.1	6:12:18
Norristown to Philadelphia.....	22.3	1:06:54	146.4	7:19:12

It was plain sailing on the first control, few of the cars failing to arrive at Sellersville with at least 15 minutes to spare. On the second control several stiff foot hills of the Alleghenies are en-

countered, and then began the series of accidents which gradually mowed down the list of competitors. At Centre Valley "Dan" Webster, driving an Oldsmobile "35" Class B roadster, skidded at the turn from the Bethlehem pike into the Allentown road, and came to close quarters with a telegraph pole, with the usual result, as far as the car was concerned, but with, fortunately, only a few bruises for his mechanic and a beautiful black eye for "Dan." The glasses which the latter wore at the time were not broken; neither were his goggles.

On Lehigh Mountain—one of the above-mentioned foothills—Bert Maucher's Peerless No. 1 (Class A) came to grief by skidding across the icy road and into a deep ditch, breaking a wheel and topsy-turvying the car. Apart from a severe shaking up for all hands, there were no ill effects suffered by the occupants.

After checking out of Allentown, Frank Hardart, Jr.'s, Elmore (Class A) was making excellent weather of it when in the outskirts of Bethlehem the chains failed to hold the car on the icy road at a sharp turn and the outfit rammed a house close to the roadside; it chopped off a portion of its porch as clean as a whistle. Again the car was put out of action and the passengers escaped without injury.

Five miles below Allentown, Franklin, No. 16 (Class A), driven by Ed. Luckenbach, turned turtle as the result of a skid on the ice, throwing all hands out and clear of the car. The result was a broken wheel and the destruction of the car's chances, but, again, fortunately, the hospital failed to corral a solitary victim.

The experience of J. A. Depew in his Winton (No. 11, Class A) gives a body blow to the pessimist who claims that the existence of the milk of human kindness is an ancient fallacy, and that it is not to be found in the market these days. In Easton, in order to avoid a woman, who suddenly stepped into the street directly in the path of his car, Depew chose to drive into the curb rather than hit her. The result was a smashed front wheel. Nearby was another Winton, belonging to an Eastonian, who insisted that Depew should take one of his wheels and continue, saying he could himself borrow a wheel in town and move along somehow until Depew could express him his wheel on his return to Philadelphia. Later, however, it developed that the collision with the curb had shaken up the car rather badly, for while tobogganning down Giant's Despair his shaft broke between the clutch and the transmission.

Another Winton, No. 17 (Class A), driven by Joseph H. Schenck, Jr., so strained its transmission in getting out of a deep ditch into which it had skidded at an icy turn that the last two-

thirds of the journey to Wilkes-Barre had to be covered with the low gear, the result being 170 points penalty for being the same number of minutes behind its schedule at the finish.

Thus the completion of the first day's run saw only 12 of the 23 Class A starters remaining with clean road scores, and two of the eight Class B contingent—and of the 17 derelicts, six were entirely down and out of the running, the remaining 11 having suffered various penalizations for lateness at controls. For reasons best known to themselves, the committeemen refused to make known the technical penalties imposed upon the contestants.

The Wilkes-Barreans fairly outdid themselves in entertaining their guests. Besides an all-day lunch, there was a reception and smoker in the ballroom of the Hotel Sterling, with solid and liquid refreshments galore. Even the chauffeurs of the town took a hand. The drivers recently formed a club and established quarters at No. 45 Simon Long Building. Here they entertained visiting chauffeurs, clubmen and newspaper men, setting out a tasty lunch and smoke goods all the afternoon and evening. There are about 25 members in the Wilkes-Barre Chauffeurs' Club, and every man of them was on the job. President George P. Kessler was assiduous in his attentions to the many visitors.

#### How Latest Official Standing Was Arrived At.

PHILADELPHIA, Jan. 4.—The final standing of the contestants in the Philadelphia-Wilkes-Barre endurance run, as officially announced early Sunday morning, underwent a shake-up this afternoon, when a protest filed in behalf of the Oldsmobile (Class A) cars, driven by Folberth and Berger, and which were originally placed in eighth and tenth places, had the bulk of their road penalties lifted, and as a result moved up into second and third places, with 13 and 15 demerits, respectively. This dims the glory of the Matheson victory somewhat, although Miller, with but 11 bad marks, still heads the list. The Anderson and Dietrich Mathesons, as a result of the decision, are fifth and sixth, respectively, with Carris' Franklin fourth.

When Folberth reached the impasse on Giant's Despair he refused to take a chance of crippling his car by taking to the ditch in an effort to get around the stranded Acme. An eleventh-hour amendment of the rules had covered this contingency; it provided for the lifting of any penalties inflicted upon a car held up by a narrow road being blocked by a stalled machine.

The Oldsmobile case was reinforced by positive testimony of observers and passengers, and was such a strong one that the contest committee upheld the protest after but a few minutes' deliberation. Final result:

#### OFFICIAL STANDING ACCORDING TO REVISED REPORT OF QUAKER CITY MOTOR CLUB'S CONTEST COMMITTEE

CLASS A—TOURING CARS						PENALTIES			
No.	CAR	H.P.	Cyl.	Entrant	Driver	Checkers	Observers	Technical	Total
7	MATHESON	15-50	4	Matheson Motor Car Co.	W. P. Miller	0	1	10	11
12	OLDSMOBILE	40	4	Olds Motor Works Branch	F. G. Folberth	0	4	9	13
23	OLDSMOBILE	54	6	Olds Motor Works	T. W. Berger	5	0	10	15
18	FRANKLIN	28	4	Franklin Motor Car Co.	C. S. Carris	14	3	5	22
15	MATHESON	60	4	Ross Anderson	Ross Anderson	0	0	23	23
6	MATHESON	15-50	4	Matheson Motor Car Co.	J. M. Dietrich	0	0	37	37
3	CADILLAC	30	4	Auto Sales Corporation	Ed. Burnshaw	43	1	37	81
2	CADILLAC	30	4	Auto Sales Corporation	Wm. Crawford	116	0	23	139
8	STODDARD-DAYTON	40-45	4	A. Hamilton, Jr.	R. Shirk	37	77	26	140
24	STEARNS	30-60	4	Wyckoff, Church & Partridge	Laurent Grosso	219	1	29	249
4	ACME	45	6	Theobald Motor Car Co.	A. McCormick	604	2	31	637
14	STUDEBAKER	30	4	Studebaker Co.	F. H. Yerger	648	2	4	654
10	MITCHELL	40	4	Penn Motor Car Co.	Wm. Freitag	671	2	15	688
20	MAXWELL	24-28	4	Maxwell-Briscoe Co.	A. H. Bitner	895	34	265	1,194
19	RAMBLER	34	4	T. B. Jeffery & Co.	F. W. Darnstaedt	720	Out	9	729
13	STODDARD-DAYTON	30-35	4	Hamilton Auto Co.	H. B. Tuttle	727	Out	45	772
9	MITCHELL	30	4	Penn Motor Car Co.	W. M. Cram	1,282	No cards	42	1,324
21	PREMIER	30-35	4	H. O. Smith	R. McNamara	18	Out	0	18
1	PEERLESS	30	4	Auto Sales Corporation	Bert Maucher	Out first day—skidded and overturned on Lehigh Mountain.			
5	ELMORE	35	4	Frank Hardart, Jr.	F. Hardart, Jr.	Out first day—skidded into porch in Bethlehem and smashed 2 wheels.			
11	WINTON	48.6	6	J. A. Depew	J. A. Depew	Out first day—broke shaft between clutch and transmission on Giant's Despair.			
16	FRANKLIN	42	6	Geo. B. Mauser	E. Luckenbach	Out first day—skidded and overturned 5 miles below Allentown.			
17	WINTON	48.6	6	Jos. H. Schenck	J. H. Schenck, Jr.	Out first day after third control.			
CLASS B—ROADSTERS AND RUNABOUTS						PENALTIES			
No.	CAR	H.P.	Cyl.	Entrant	Driver	Checkers	Observers	Technical	Total
5	PEERLESS	30	4	Wm. Reuss	W. G. Brooks	246	2	22	270
4	MAXWELL	24-28	4	Longstreth Motor Car Co.	W. C. Longstreth	452	1	75	528
3	OLDSMOBILE	35	4	Olds Motor Works Branch	Dan Webster	Upset at Centre Valley and bent gear-shifting levers.			
8	BUICK	18	4	Edward Wilkie	T. Wilkie	Sideswiped wagon at Bethlehem; smashed wheels.			
1	STODDARD-DAYTON	45	4	H. C. Vetterlein	H. C. Vetterlein	Out on first control second day.			
2	MITCHELL	20	4	Penn Motor Car Co.	C. Borie, 3d	"	"	"	"
6	KNOX	38.25	4	Knox Auto Co.	W. Bourque	"	"	"	"
7	RAMBLER	32	4	Brown Auto Top Co.	I. L. Brown	"	"	"	"

# THE AUTOMOBILE

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## ANENT THE PASSING SHOW

To say that the Grand Central Palace show indicates progress is both trite and commonplace. But this progress is noted in the mechanical features and in the body work which the individual prospective purchaser can see, appreciate, and willingly pay for.

A large amount of substantial growth is apparent in the commercial vehicle section, which seems to grow every year. A year or two more and an entirely separate show for the power wagons will be a necessity.

A fine lot of taxicabs of vastly improved appearance and superior mechanically are to be seen, many of the newcomers being in this group.

The high-wheel section, to the partisan of that type, is numerous and, beyond mere numbers, are worthy of very close attention.

The constant ramification of the industry is shown by the exhibition of a well worked out children's car along simple lines, small and compact, but complete in every minor detail.

But the delightful part of the show to any real optimist is the touring section. This individual with the roseate views of life wants no sombre matter of fact commercial vehicle, no homely but useful motor buggy, nothing but the high-powered high-grade distance traveler. And it is present in force, too.

To the cheerful optimist, the show really is an expression of optimism: Talk of big outputs, factory enlarge-

ments, doubling the working force, etc. On every hand you meet it. Every one is cheerful, confident, smiling, sure of a pleasant and profitable future. Manufacturers are unwilling to talk of conservatism, or to croak or discredit the present outlook for the biggest year the industry has ever known. Agents who had sold their allotment came begging, imploring, demanding more cars. They are sure they can sell them; regardless of the section of the country, the car or the price, they can sell anything. Of this they are confident.

Back of all this can be but one thing, the biggest and the most cheerful optimist of them all, the great American public, which has shown that it wants American cars and wants them badly. Not only do they want them now, but they are going to continue to do so, to-morrow and the next day, and a year from now. It is the manufacturer who sees and appreciates this that is building the big three-story additions. The numerous garage buildings all over the country is but a straw in the wind which promises soon to be a gale. The vast extension of the accessory business is another indication of it. On every hand, signs are not lacking to show that any optimistic view of the automobile situation, no matter how roseate, is not without a solid foundation.



## PLANS OF CARRIAGE BUILDERS INDICATED

Doubtless the average automobile builder looks upon the buggy type as the carriage builders' concession in recognition of the growth of the automobile industry and the fear that the tide is waxing strong, so strong in fact, as to sound the death knell of the horse as an animal of traction; hence the carriage that the horse made possible. A canvass of the situation as it is reflected at the show would seem to indicate that the carriage man has gone a little farther, in that he has evolved the buggy type quite a little. In other words, the crude power buggy of a year ago is rapidly reducing itself to a machine, with higher wheels than the wheels as they obtain on automobiles, and the question arises if it is not really a reduction to practice of the "solid tire" in the buggy type as against the pneumatic tire in automobiles. True, the buggy types have held to what the automobile builder calls crude methods, many of which were cast aside several years ago by the builders of automobiles. On the other hand, it is easy enough to prove that the very automobile designers who see no good in the buggy have been increasing the diameters of their wheels year after year as the cost of pneumatics fell away. And who will deny that they will not continue the process for some time to come, as the cost of the tires is reduced? On the whole, then, is it not a fair indication of the drift to take into account the desires rather than the products? That a half loaf is better than no bread is assured, and that the pneumatics were held to a low diameter for several years was because none could afford to pay for more. In the meantime, solid tires made slow but sure progress, and the carriage makers were compelled to use them—or build automobiles. They struck the trail with solids, and used the carriage type of car in the process. The end is, as might have been predicted, the buggy type of mechanical car, which has simmered down to a proposition in which the advantages of resilient high wheels coupled with solid tires produced a situation of more than passing interest; and the end is not yet in sight.

## AUTO ANGLES OF THE RECENT TARIFF HEARINGS

WASHINGTON, D. C., Jan. 3.—The recent tariff hearings before the Ways and Means Committee have developed the interesting news that the Fiat Automobile Co., of Turin, Italy, is contemplating the establishment of a factory in this country. This fact was conveyed to the committee by Henry B. Joy, of the Packard Motor Car Co., in the following to Chairman Payne:

"I take the liberty of advising you that in the brief of the motor car manufacturers, which we are struggling to get ready, we suggest that the Fiat Automobile Co. in New York is connected so closely with the Fiat Automobile Co. of Turin, Italy, that the sales prices of cars between the factory and the New York store for the purposes of custom-house valuation may not be exactly on the level. In support of this I have seen the original letter of the Fiat Automobile Co. of New York to the Mayor of Detroit, a copy of which I enclose to you, in which the Fiat Automobile Co., being the New York company, speaks constantly throughout the letter of its relationship to the parent factory in Turin, Italy, which may be of interest to your committee. It is also worthy of note that the tariff laws as they now exist have produced an intent in the minds of the Turin company to remove its major part to America."

The letter to the Mayor of Detroit, referred to by Mr. Joy, is dated New York, December 15, 1908, and is signed by The Fiat Automobile Co., E. R. Hollander, vice-president. It follows:

"Owing to the strong probability that there will be no relief for imported cars in any customs revision that may be made under the new administration, we have decided to establish a large factory in this country for the manufacture of our cars and to remove to it a large portion of our manufacturing machinery, as well as our organization from Turin. We are therefore looking about for a suitable place to locate this new factory, which will be of very large proportions, and are writing you with the hope that you will do us the courtesy of bringing this question before the proper persons or organization in your city, with the idea that we may ascertain what inducements would be made, if any, for the establish-

ment of such a plant in Detroit. We would guarantee to employ 500 skilled mechanics to begin and within a year employ 2,000. One of the officers of this company expects to sail for Europe about the middle of January, and any proposition that we might receive from your city will be submitted to our directors in Italy, upon his arrival, when the matter will be definitely settled.

In connection with the duty on antifriction ball bearings, the Packard Motor Car Co. sends the following communication to the Ways and Means Committee:

"Relative to duty on ball bearings, I would like to register with the Ways and Means Committee the attitude of this company toward the duty on ball bearings. This company favors the retention of the existing duty, namely, 45 per cent, on ball bearings. We are now large importers of ball bearings, importing over \$100,000 worth from Germany and other European countries each year, on which we pay 45 per cent. duty. We do this because there are no ball bearings made in America of the same quality and durability as those which we import. We feel that with the existing tariff the American ball-bearing manufacturers may learn to make better bearings, as good as those in Germany, in the course of time. In this event the American competition would naturally reduce the price. American ball-bearing manufacturers have not yet gotten to a competitive basis. They have all been so busy supplying a new trade that it was more of a question to get the stuff out than it was as to price or quality, but the whole situation is rapidly shaking itself down to a competitive basis."

The various automobile manufacturers, including the Diamond Chain & Mfg. Co., Indianapolis; Whitney Mfg. Co., Hartford; Baldwin Chain & Mfg. Co., Springfield; Lefever Arms Co., Syracuse, and Link Belt Co., Indianapolis, have joined in asking the Ways and Means Committee that no reduction be made in the present tariff of 45 per cent. ad. valorem on their product. They presented reasons why the present duty should be retained.

## NEW YORK'S GOVERNOR ASKS FOR MOTOR LAW REVISION

ALBANY, N. Y., Jan. 6.—Governor Hughes in his message to the Legislature, read in both Senate and Assembly at noon to-day, has a recommendation which will interest all automobile owners. The Governor recommends a heavier tax on motor vehicles, the proceeds to be used for the repair of highways, and also drastic legislation and penalties for the protection of those whose lives he now seems to believe are imperiled by the reckless driving of automobiles. The Governor combines his good roads and motor vehicle recommendations under the same sub-head of "Highways and Motor Vehicles," and says:

There have been 809 miles of State roads completed during the past year. The new Highway law is now in effect and provides for an improved system of administration designed to perfect methods and secure proper continuity of organization and policy. It is of little purpose to build new roads unless the roads which are constructed are also properly maintained. And in no department of the State's work are there more serious problems and

greater need of the utmost efficiency. It is believed that these necessities are fully appreciated by the people and that in response to their demand we shall be able to secure a system of improved highways worthy of the State.

The difficulty of maintaining our highways has been so largely increased by the use of motor vehicles that I recommend for your consideration the advisability of imposing a substantial license tax for the privilege of operating motor vehicles within the State, the proceeds to be devoted to highway repair. It is desirable that such license fees should be uniform in our State and in the States with which we are in contact, and in advance of legislation opportunity should be offered for prompt interchange of opinion and for securing an agreed basis of action. This, it would seem, might be accomplished through the Commissioners on Uniform Laws.

The reckless disregard of human life that is so frequently manifested in the driving of automobiles calls for drastic measures of protection, both with regard to means of identifying vehicles and in providing an increased punishment where those guilty of criminal conduct seek to escape arrest. And I invite your attention to this matter.

### HOUPt IN THE ROLE OF MAKER.

Several unofficial reports dealing with the relations between the Harry S. Houpt Company and the E. R. Thomas Motor Company have indicated a severance of these relations in the near future. Mr. Houpt will handle the new Herreshoff car as a private venture and not as the Harry S. Houpt Company, because of the contract which the latter company has with the Thomas people. This is in force at present, and will continue until next August, Houpt energy to be devoted to the same line as before.

Upon the expiration of this contract, however, a switch will be made to a new line of cars, including the Herreshoff in the "fifteen-hundred class," and a new big car to bear the Houpt name. The details of this new one and of its manufacture have not been made public.

### A. B. TUCKER DIES VERY SUDDENLY.

A. B. Tucker, well known in automobile circles, succumbed to heart disease early Monday morning of this week at his home in New York City. Mr. Tucker had many friends in automobiling, and had been a prominent figure in the promoting line for several years, though his first important position was that of secretary of the National Association of Automobile Manufacturers. Subsequently he served as secretary of the special A. A. A. touring committee having in charge the annual tour for the Glidden trophy. Later Mr. Tucker became secretary of the New York Motor Club, and later was identified with the New York Automobile Club. During the past two years he has looked after publicity matters for several concerns, at which work he was exceptionally successful.

## CLUBS PREPARE FOR WORK OF NEW YEAR

### DENVER AUTOISTS TO HAVE LIVE SEASON.

DENVER, COLO., Jan. 2.—There promises to be considerable activity in automobiling circles in Denver during the coming year, according to the strenuous program being mapped out by the Denver Motor Club. It is proposed by the club that every man, woman, and child in Denver, the people of Colorado, and the whole country in general, shall know that the club is living up to its motto of "Do Something." The membership is now climbing rapidly toward the 400 mark, and it is expected to have double that number enrolled when the A. A. A. tourists arrive in Denver next July.

The most conspicuous event now on the Club's calendar is the automobile show, which will be held February 16 to 18 at the Auditorium. This show promises to surpass any exhibition of the kind ever held west of Chicago. The local dealers have entered enthusiastically into the project, and are urging the Eastern manufacturers to come to the front and send exhibits here. The show committee is in receipt of assurances from Eastern manufacturers who have no representatives here in which they say they will send exhibits to the Denver show.

Some time in April it is planned to have an illuminated parade. The principal streets will be decorated and the cars will be illuminated with electric lights in the club colors. Handsome prizes will be given to stimulate interest in the event.

In May there will be a gymkhana. There will be obstacle races, slow races, balancing the cars on a teeter board, spearing Greeley potatoes suspended on a string, and other interesting events.

Orphans' Day will be observed early in June. On this day every member of the club is expected to furnish his car and aid in giving the fatherless and motherless boys and girls of Denver a good long automobile ride. The various institutions of the city will be called upon to furnish the children and there will be plenty of cars to accommodate them all.

In July the A. A. A. Tour will hold the boards. When the army of Eastern motorists swoop down on Denver after their long journey across the continent, the Denver Motor Club will be prepared to give them a genuine, old-fashioned Western welcome. The city will be decorated in their honor and for a week at least there will be a continuous round of motoring entertainment such as the Glidden tourists of former years have never before witnessed. There will be a road race, a hill climb, and other attractions, so that the tourists will not have an idle time on their hands during their stay in Colorado.

Sandwiched in between these events, the club is arranging for week-end runs to various towns and mountain resorts where splendid dinners and various mild sorts of entertainment will be given. The club is now fairly settled in its new quarters, 1407 Cleveland place, where the members and their guests find all the comforts of home.

### OHIO AUTO LAW DEVELOPS AN IMPERFECTION.

COLUMBUS, O., Jan. 5.—A queer freak has developed in the State Motor Vehicle Law, for there is no provision to compel the changing of colors on the tags each year. Consequently this feature of the law received considerable attention at the meeting of the directors of the State Automobile Association in the rooms of the Columbus Automobile Club last week. An attempt will be made to secure the passage of such an amendment, and also one which shall provide that all licenses must expire at a certain time of year, say January 1, in order that the task of renewing them may be made much lighter. A number of other amendments were suggested, but because of the opposition by some of the members of the Legislature to anything pertaining to automobiles it was thought better not to go too far, for fear the entire bill might be declared unconstitutional. In the meantime all the interested ones are working for the amendment:

### SPEARE AGAIN BAY STATE PRESIDENT.

BOSTON, Jan. 4.—The annual meeting of the Bay State Automobile Association was held to-day in the clubrooms in the Hotel Carlton, and Lewis R. Speare, former president of the association, was again chosen president, succeeding Elliott C. Lee in that office. Harlan W. Whipple was reelected vice-president. J. S. Hathaway, manager of the White Company branch in this city, is the new treasurer. Secretary James Fortescue was reelected secretary.

The new directors are George W. McNear, Dr. Julius F. Hovestadt, F. A. Hinchcliffe, manager of the Winton branch; K. M. Blake, manager of the Locomobile branch, and C. F. Whitney, manager of the Park Square Auto Station and agent for the Alco and the Stoddard-Dayton. The efforts of the retiring officers to free the association from debt were successful, and the report of the treasurer showed that the association no longer was encumbered by a debt, and that it was in excellent condition financially.

### BRONXVILLE CLUB HOLDS ANNUAL MEETING.

BRONXVILLE, N. Y., Jan. 5.—At the second annual meeting of the Bronxville Automobile Club, held at the Hotel Gramatan, the following board of governors was chosen for the ensuing year: H. Ward Leonard, Arthur W. Lawrence, H. R. Burt, Frederick Ackerman, Frederick H. Elliott, W. K. Fertig, Eugene Southack. In executive session the board elected the following officers: President, H. Ward Leonard; vice-president, Frederick Ackerman; secretary-treasurer, H. R. Burt.

The club has been very active in the erection of road signs, and has held several successful runs during the past year. It has been suggested that a new modern garage should be erected to care for the large number of cars now owned in Bronxville, and it is quite probable that the local club officers will assist in the selection of a site which would be convenient to all, especially the visiting autoists, many of whom are patrons of the Hotel Gramatan.

### LOUISIANA MOTOR LEAGUE JOINS A. A. A.

NEW ORLEANS, Jan. 4.—The State Automobile Association, the Louisiana Motor League, has made application for admittance to the American Automobile Association, and has announced that it will hold weekly meetings hereafter. The league is interested in the establishment of good roads in the South, and is planning a steady campaign in that direction. It will work in unison with the New Orleans Automobile Club.

Extensive preparations are being made for the races during Mardi Gras week, February 20-22, at the fair grounds track. These races are under the auspices of the New Orleans Automobile Club, and will be one of the chief attractions for Mardi Gras visitors. Fred J. Wagner, of New York, has been engaged to act as referee and starter and general manager for the New Orleans races. He has already assumed charge of the preliminaries.

### WILLIMANTIC CLUB VOTED FOR LINCOLN.

WILLIMANTIC, CONN., Jan. 4.—At the annual meeting of the Willimantic Automobile Club the following officers were elected: President, Louis B. Lincoln; vice-president, Walter B. Knight; secretary, Frank H. Elmore; treasurer, Edward F. Whitmore; board of governors, the officers and Ernest P. Chesbro, Arthur B. Small, Frank L. Powell; directors, Connecticut State Automobile Association, Edward F. Whitmore and Harry J. Cotter; member Good Roads Committee, E. P. Chesbro. The treasurer reported money in the treasury and the expenditure of other funds for good road work. The club then adjourned until after the holidays, when the work for the new year will be mapped out.



## News in General

Reos Being Towed from D. L. & W. R. R.  
Ferry to R. M. Owen & Co., 1759  
Broadway, New York.

**Maxim Invents Novel Tire Pump.**—The demand for mechanical tire pumps has produced many of these, but one of the latest to come out bids fair to be the simplest, and, therefore, the best of all this line of labor saving devices. In this new device the exhaust from the motor is used instead of atmospheric air. H. P. Maxim has introduced this new and novel tire pump, which is readily attached to any gas engine and which is actuated by the exhaust. The inflator is carried along the sides or tops of the cylinders and will fit any car with slight alterations. It consists of a copper tube and series of coils permanently attached to the relief cock, by which the exhaust gas is cooled and forced into the tires. It is claimed that the exhaust gas is a better inflating agent than air, for the reason that it is non-oxidizing. In place of the conventional relief cock, there is inserted the connection of the pump, which is nothing more or less than a long copper tube containing several coils with a cock at each end. One of these cocks is inserted in the place of the relief cock and contains a small steel ball. The long copper tube is carried out to the dash convenient to the driver's seat. When it is desired to utilize the pump, the exhaust gas is permitted to pass through the copper tube and the coils tend to cool it as well as care for foreign matter. A pressure gauge is attached to the dash. It requires about two minutes and a half to inflate a tire with the device.

**Duluth Wants a Motor Patrol.**—Bids will be opened December 30 for an automobile patrol wagon which must be delivered within two months. Power is required to climb any of the city's big hills, but the speeds specified are low, 20 m.h.p. maximum, 4 m.h.p. minimum. A seating capacity of ten is called for, as well as stretchers. The successful bidder must operate for thirty days at his own expense and guarantee the machine for a year. In addition, the cost must not exceed \$2,500.

**Autos Popular with Kansas Farmers.**—To demonstrate the extent of the adoption of the automobile in the rural districts, some enthusiast has collected figures which show that over 600 farmers in Central Kansas alone own cars, with orders of Spring delivery of 100 more.

**Advance Show.**—An interesting little exhibit is the advance showing of the Winton Motor Carriage Company at its Broadway salesrooms, New York City. This includes all of its Garden Show cars, and the Winton phaeton sold to Robert Allison, of Port Carbon, Pa., in 1898, said to be the first bona-fide sale of an American made gasoline car. The "six," which won the first prize in the upkeep contest, is also on display.

**Nitro-glycerine Automobile.**—Probably nothing during the past year has indicated more clearly the advance automobile construction, carrying with it the total absence of vibration, than the announcement of the recent use of an ordinary car to carry 40 quarts of nitro-glycerine a distance of 100 miles over roads not particularly good. This was done by W. D. Tracy, an oil well shooter of Bolivar, N. Y., and the trip was from that town to Bristol, where Mr. Tracy shot a gas well for the Ontario Gas Company.

**Automobile Service for Municipality.**—An American consul in Western Europe reports that a company has been organized for the purpose of establishing automobile service for the city in which he is located. It is proposed to increase the stock of the company as business grows. The consul has forwarded the company such catalogues of American cars as he had on file, and suggests that manufacturers write direct to the director of the company, whose address is given in the report. In writing for this report, refer to No. 2,903.

**Firestone Jollification.**—To celebrate the completion of a four-story building, the officials and employees of the Firestone Tire & Rubber Company joined in a jollification supper and dance Tuesday evening, December 29. Nearly a thousand guests were present, filling the whole fourth floor, and all voted it the best time ever. This new building will be exclusively for the manufacturing equipment of the new non-skid tire.

**Auto Stages for Florida Resorts.**—A regular line of automobile service between Ormond, Daytona and Palm Beach is about to be inaugurated by the Florida East Coast Hotel Company, for the benefit of the guests at the hotels of those resorts. The service will be furnished by three forty-horsepower "A. L. Co." cars, which were shopped a few days ago by the American Locomotive Company.

**Big Demand for Anti-Skid Tires.**—Due to the great run on the staggard tread tires, the Republic Rubber Company, of New York, has been obliged to move to larger quarters. Their new home will be at 229 West Fifty-eighth street, where a four-story building will triple their floor space afforded by the present building across the street.

**Benefit Association for Firestone Company.**—The factory and office employees

of the Firestone Tire & Rubber Company have organized the Firestone Mutual Benefit Association, for the purpose of providing a benefit fund. The aim will be to furnish both sick and death benefits for all members by a series of social gatherings to strengthen the relations between them.

**More Fire Wagons.**—The White Garage Company has been awarded the contract to furnish the fire department of Baltimore with two White steamers. The company's bid was \$4,194. The cars will be used in responding to alarms by Chief Horton and Deputy Chief Emrich.

**Speedwell Building Again.**—The Speedwell Motor Car Company, of Dayton, O., will soon begin work on another new building. This will be used for chassis painting only. They are also erecting a 12,000-gallon water tower, being outside of the city fire limits.

**Truck Company Moving.**—The Reliance Motor Truck Company is now busy moving from Detroit to their new and extensive plant in Owosso, Mich., where the full line of Reliance trucks with two-cycle motors will hereafter be built.

### IN AND ABOUT THE AGENCIES.

**The Pierce Arrow Again Stands the Strain.**—The builders of the Pierce Arrow have just been notified of an incident which happened to a California owner of a Pierce, the results of which make them feel that they have again been justified in their policy of refusing to sacrifice strength for light weight. A. A. Bussey, of Oakland, Cal., with a party of eight in his six-cylinder Pierce, was compelled to drive his car over an eight-foot embankment to avoid collision with a railroad train. According to the story, the car turned over three times before coming to a stop, with the result that the occupants received a severe shaking up with a few bruises. The top, glass front, and radiator were smashed, but on righting the car no serious damage was found and it left the scene under its own power.

**Ramblers Long-Lived.**—The statement was recently made that the average life of an automobile was about five years. Figures given out by Thomas B. Jeffery & Company, relative to Rambler cars, would seem to indicate that this was a very conservative estimate. The statement is made that 13,800 Ramblers have been built and are now running, of which 400 are seven years old, 1,500 are six years old, 2,100 admit to five years, 2,300 are no less than four years, while the remaining 5,000 have been built in the past two years. Another similar significant fact is that the repair parts in the past year amounted to but \$213,438.86, an average of \$15.25 per car.

**Goodyear, Boston.**—Owing to the increase of business, the Goodyear Tire & Rubber Company has acquired new quarters at 669 Boylston street, and is tearing down the old building now standing on that lot and erecting a new five-story building, with all modern improvements and fully equipped for business. The new building will contain over 10,000 square feet of floor space. An up-to-date repair shop is included, with all the latest improvements. The branch expects to be in the new quarters about May 1.

**Speedwell.**—These cars will we handled in Pittsburg during the coming year by the Speedwell Automobile Company, with salesrooms and garage at 5986 Center avenue; in Philadelphia by the Standard Motor Car Company, 616 North Broad street, and in Chicago by the Speedwell Motor Car Company, with of-

ices and salesrooms at 1355 Michigan avenue. The Speedwell Motor Car Company, Dayton, O., are the makers.

**Stevens-Duryea, New York City and Philadelphia.**—The A. G. Spalding & Bros. announce the enlargement of their New York and Philadelphia salesrooms, the latter including a new building at 202-204 North Broad street, which is considered one of the handsomest in the row. The Stevens-Duryea line for the coming year will be a continuance of the successful "fours" and "sixes" of the past season.

**Franklin.**—The H. H. Franklin Mfg. Company has appointed the following additional agents for 1909: Springfield, O., William Gaitter; Cherokee, Ia., William R. Johnson; Coffeyville, Kan., Brown Brokerage Company at Coffman's Auto Garage; Pierre, S. D., Gas Belt Land and Abstract Company; Aberdeen, S. D., F. W. Boettcher; Columbus, Ga., C. E. Shultz.

**Winton, Baltimore.**—The Winton Motor Carriage Company has secured more extensive location on Liberty street, near Lexington. This is in the business district. The new store will be ready for occupancy January 15. The local branch house has been at North avenue and St. Paul street since it was established a little more than a year ago.

**Changed Their Name.**—The Marion Overland Auto Company, of 1875 Broadway, New York City, sales agent for both the Marion and Overland cars, has obtained the consent of the Supreme Court to change its name to the Overland Company, of New York. This will be adopted January 7 without any change in the personnel of the company.

**Velie, Chicago.**—The new Chicago branch of the Velie Motor Vehicle Company, of Moline, Ill., will occupy the building at 1615-1617 Michigan avenue, now tenanted by the Packard agency, which will move in the Spring. H. G. Moore, former secretary of the McDuffie Automobile Company, will have charge.

**Pope-Waverley, Oakland, Cal.**—The Western Electric Vehicle Company has now located in their new building at Thirty-fourth and Telegraph avenue. Besides maintaining an ambulance service, they will conduct a garage and handle the Pope-Waverley, Baker and Detroit electrics.

**Packard, Providence.**—The Flint Motor Car Company, agents for the Packard, has been obliged to double their floor space. The large store adjacent to the present agency has been leased and the partition walls are now being torn out.

**Winton, Baltimore.**—The Baltimore branch house of the Winton Motor Carriage Company has removed to Liberty street at Lexington avenue, where fine new quarters have been secured.

**Elmore, Utica, N. Y.**—I. R. Gardiner, with offices in the Commercial Travelers' Building, has been appointed agent for the Elmore car in Oneida and Herkimer counties.

**Renault, Brooklyn, N. Y.**—Alexandre Clement, the well-known racing driver, has taken over the Plaza Garage, 920-922 Union street. He is the agent for the Renault car.

**Maxwell, Trenton, N. J.**—Thoman Bros., agents in this city for the Maxwell car, has placed a sub-agency in Bordentown. Bernard H. Adams is to be in charge.

**Franklin, Kalamazoo.**—The E. J. Dayton Motor Company, who will handle the Oldsmobile and Franklin, has opened headquarters on Water street.

**R. and L. Electric, Pittsburg.**—C. P. Bowdoin, of the Mutual Motor Car Company has taken the agency for the Rauch and Lang electric car.

**Thomas, Wilkes-Barre, Pa.**—The Coward & Long Company has taken a sub-agency for the Thomas in this vicinity.

**Oldsmobile, Newark.**—Sanford J. Wise will have charge of the new branch at 81 Washington street, Newark.

**Reo, Trenton, N. J.**—Dr. A. H. Boice has been appointed agent for the Reo car.

#### PERSONAL TRADE MENTION.

**Wallace L'Hommiedieu**, formerly with the Autocar Company, Ardmore, Pa., and the Electric Vehicle Company, Hartford, Conn., has just joined the sales forces of the Apperson Brothers' Automobile Company, Kokomo, Ind.

**John B. Guthrie** will represent the Carpenter Steel Company after January 1 in the Pittsburg district, with offices in the Columbia Bank building, Fourth avenue and Wood street, Pittsburg.

**F. A. Brezina**, formerly with the Electric Vehicle Company as purchasing agent, is now connected with the Locomobile Company of America, Bridgeport, Conn.

**Emory Carhart**, salesman for the Denver branch of the Studebaker Company, tendered his resignation, which took effect January 1.

**Elliott S. Church** is now connected with the sales force of the George H. Dunham Company, Boston.

**Robert W. Blake** has joined the local force of salesmen for the Pullman car in Philadelphia.

#### RECENT INCORPORATIONS.

**MotoBloc Import Company**, New York City, with a capital of \$5,000, will manufacture, deal in and rent automobiles. Incorporators: H. M. Brown, F. W. Mills, and E. J. Forham, 154 Nassau street.

**Garwood Electric Company**, Garwood, N. J., capital \$250,000. Incorporators: E. A. Keegan, A. K. Westerdahl, G. N. Williams and G. W. Archinon.

**F. & D. Mfg. Co.**, Portland, Me., capital \$400,000, will do a general automobile business. C. E. Eaton is president and T. L. Croken, clerk.

**Fritz Bros. Automobile Company**, Oklahoma City, capital \$40,000. Incorporators: C. D. Fritz, E. J. Fritz and R. W. Yantis.

**F. S. Hoaglin Automobile Company**, Oshkosh, Wis., capital \$10,000. Incorporators: F. S. Hoaglin, A. E. Badger and L. O. Chase.

**Read Garage and Machine Company**, Belfast, Me., capital \$10,000, will work a garage and machine shop.

**Star Garage Company**, Londonville, N. Y., capital \$25,000, to do a general garage business.

**Hitchcock Banks Motor Car Company**, of Providence, R. I., with capital stock of \$25,000.

**Norris Motor Company**, Cambridge, Mass., capital \$50,000. President, W. S. Young.

**Pioneer Motor Car Company**, of Muskegon, Mich., with capital stock of \$10,000.

**Farmobile Manufacturing Company**, of Columbus, O., with capital of \$200,000.

**Markle-Light Motor Car Company**, of Pottstown, with capital of \$150,000.

**Jewel Motor Car Company**, of New York, with capital stock of \$10,000.

**Automobile Coaching Company**, of Boston, with capital of \$20,000.

**M. F. D. Motor Parts Company**, Dover, Del., capital \$25,000.

**Pierson Garage Company**, Janesville, Wis., capital \$1,000.

#### RECENT PUBLICATIONS.

**The Girl and the Motor**, by Hilda Ward; 120 pp., cloth, illustrated; the Gas Engine Publishing Company, Cincinnati, O.; price, \$1. It is not often that a girl writes a book on gas engine troubles, and a good, readable book at that, but that is the fact of this case. There is no plot, but quite a little romance, some good descriptions of beautiful Long Island scenery, and a touch of the eternally feminine to take the subject, the real subject of the book, completely out of one's mind. The story deals with the unusual, or, perhaps, a better word would be unique experiences of a young lady who, without previous experience in that line, buys first a small motor boat, later a small 6-horsepower machine, and finally a 20-horsepower automobile. Some of her experiences call for feminine remedies, which are described in language that is truly feminine, as, for instance, "gaskets with buttonholes for the bolts to go through"; a commutator, "the under side of which consisted of a piece of brass set in a fiber bracelet around its shaft," etc. It is a pleasant, readable little book, gotten up in the style of a gift edition, on heavy book paper, with wide margins, pretty type face, and a good binding. The novice and some "experts" will learn much from the troubles experienced by the author and their solutions.

**Standard Roller Bearing Company**, Philadelphia.—Engineers and others interested in ball or roller bearings should send for No. 24 catalogue of the Standard Roller Bearing Company. This 200-page booklet in pocket size not only contains pictures taken in the various shops showing the manufacturing processes, but many diagrammatical applications, efficiency, power and friction curves, together with a full description and prices of all S. R. B. products. These include ball and roller bearings, complete front and rear axles, gray iron, brass and crucible steel castings, drop forgings and machine work on particular duplicate parts, which can be handled in automatic machinery.

**National Brake & Electric Company**, Milwaukee, Wis.—Under the title, "Air Compressors for Industrial Service," this concern has issued a little pamphlet that will greatly interest garagemen and others having necessity for compressed air. Besides a regular line varying from a single-cylinder, 2-1/2 by 4 1-2 machine up to three-cylinder, 11 1-8 by 15 1-2, the company is now turning out a portable outfit in several styles. This consists of a small compressor and motive power mounted on a hand truck, the whole being made narrow enough to go through ordinary doors. Dimensions, capacity and other data are given in tabular form.

**Premier Motor Mfg. Co.**, Indianapolis.—The frontispiece of the early catalogue of the Premier Motor Mfg. Co. shows an interesting photo of the 100-miles-for-100-days car passing the 5,000-mile mark on the second day of the Glidden Tour. This leaflet is a brief description of the mechanical details of this Indianapolis product. The changes indicated are very few and far between, being refinements rather than changes. The low-tension make and break ignition is now regular on both the four and six-cylinder models. This company may be fairly numbered among the American advocates of this type of ignition.

**Hart-Kraft Motor Wagons**, York, Pa.—Catalogue B, describing the commercial power wagons recently placed on the market. These include four types of body on the same chassis, all of 1,000 pounds capacity. The feature is an interchangeable self-contained unit power plant which may be removed at very short notice by the simple removal of five bolts. This allows the withdrawal of the complete power plant and the immediate substitution of another with a minimum amount of lost time.

**A. S. Noonan Tool & Machine Works**, Rome, N. Y.—Catalogue showing automobile, motorcycle and bicycle tools manufactured by this firm. These include valve spring lifters, tire holders, muffler cutouts, spark plug terminals, etc.

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**A** 1909 seven-passenger Apperson, cost \$4,700. February delivery. Failure in speculation forces me to sell my contract at a loss of \$1,000; this your gain. F. P. care The Automobile.

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1907 35-h.p. Grout, 5-passenger, with top, Rutenber motor ..... 800  
Thomas B. Jeffery & Co., 1462 Michigan Ave., Chicago, Ill.

**A** N ELECTRIC VICTORIA in fine order; batteries nearly new; demonstration; using gas car, reason for selling; cost \$1,375; price \$500. Address "E," Room 1004, 261 Broadway, New York City.

**A** LL KINDS of cars at all kinds of prices, \$150 and up. Write us or call and we can satisfy you. Western Auto Sales Co., 309, 10-11 Michigan Ave., Chicago, Ill.

**A** PIERCE-ARROW car, 40-h.p., 1907 model, full equipment, regular Pierce top, and glass front. The car is in first-class condition. For further particulars, address George A. Driggs, Waterbury, Conn.

**A** PPERSON touring car, cost \$3,750. In perfect condition, with top, glass front, extra tires, etc., \$1,750 in money (not farms or mining stock). E. Hambley, S. E. Eighth and Main Sts., Cincinnati, Ohio.

**A** UTO BARGAINS.—Before you buy, talk to us. We have them from one to five hundred dollars and can save you money. Ewing-Kean Machine Co., 723 W. Fort, Detroit, Mich. Phone, West 1253-R.

**A** UTOBILIE BARGAINS. — Used machines, all kinds, \$150 and up. Send for our complete list. Johnson Auto Co., 4320 Olive St., St. Louis, Mo.

**A** UTOBILIES less a dealer's profit. Selling for owners on 5 per cent. commission, you get your car here less the usual profit demanded by the dealer. In the largest garage in New York we have 250 cars to select from. We are two blocks from Broadway, and each block represents many thousands saved in rent. Our system and location make it evident why our prices are often less than one-half what dealers ask. Among recent arrivals are the following special tonneaus:

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**B.** L. M., 35-h.p. 1908 model, high-speed runabout; very best condition; complete equipment and spare parts. Address "Duncan," care The Automobile.

**C** AMERON, air-cooled, three-passenger roadster, four-cylinder; taken in exchange and thoroughly overhauled; perfect running order; \$550. Cameron Agency, Room 601, 546 Fifth Ave., New York City.

**C** ORBIN touring cars and runabouts, \$800 and up. Thoroughly overhauled by us and guaranteed. Corbin Motor Vehicle Cop'n of N. Y., 1888 Broadway, near 62d St., New York City.

**D** ON'T PAY TOO MUCH or too little for a slightly used or second-hand automobile. Extravagant claims are made for automobiles at your own price. We have 150 to 200 types and models of various makes of automobiles at a full dollar of automobile value for every dollar of price. Much detailed information of great economic interest to prospective purchasers is here for you; and you will be truly grateful after investigating by a personal call or through the medium of our price list. International Auto Co., 542-544 Wabash Ave., successors to Chicago Auto Warehouse and Chicago Auto Commission Co., Chicago, Ill.

**E**LMORE CAR, fully equipped, \$350.00. Box 519, Mountain Dale, N. Y.

**F**RANKLIN RUNABOUT FOR SALE.—Excellent condition; good tires. 1007 Wylie Ave., Pittsburg, Pa.

**F**RANKLIN light touring car; all in fine condition; extra equipment; specifications and photo sent on request; price, \$300. H. J. Daniels, Norwich, N. Y.

**H**AVING PURCHASED next year's model, I will let go my 35-h.p. Peerless, demilimousine body, for \$1,250; completely equipped and put in A-1 shape; no agents need answer. Address Box 134, care The Automobile.

**H**OLSMAN.—Just overhauled; Schebler carburetor, leather top, special battery case; low price. 47 William St., Newark, N. J.

**M**AXWELL runabout model LC 1908, with top, gas lamps and generator complete; good as new, only run a short while. Will sell for \$600 and guarantee it to be in perfect order. Write J. O. Sparks, Gaffney, S. C.

**M**ODEL S, "07" HAYNES, 4-cylinder, 5-passenger touring car, in first-class condition; car and equipment cost \$2,800; will sell for less than half cost. Write for particulars to G. A. St. Germain, 241 Main St., Berlin, N. H.

**M**UST be sold immediately regardless of value one 14-h.p. two-cylinder chainless runabout automobile, with top; in fine running condition, etc. First check for \$395 takes it. Box 99, Sumter, S. C.

**M**UST DISPOSE of my Stoddard-Dayton roadster for cash at once; was purchased in May, 1908, and run only 2,000 miles; looks just like new; has four cylinders, 40-hp. motor; in perfect condition; first offer for \$1,400 gets it; dealers need not answer. Address Box 23, care The Automobile.

**O**NE 1907 Model G touring car, fully equipped, in A-1 condition; run about 5,000 miles; will sell at a bargain. Dauer Auto Co., Providence, R. I.

**O**NE 1907 STEVENS-DURYEA 5-passenger, 6-cylinder car; one 1906 Stevens-Duryea Model R 4-cylinder, 5-passenger car; one 1906 5-passenger, 4-cylinder Oldsmobile. For full information inquire Maine Motor Carriage Co., Portland, Me.

**O**NE 1907 POPE-HARTFORD roadster. One 1906, Type 12, Pope Toledo touring car. One 1907, Model R, 4-cylinder Stevens-Duryea. One 1907, Model U, 6-cylinder Stevens-Duryea. One 1908, Model S, Ford roadster. One Model B, single-cylinder Rambler. All these cars in good condition and will be sold cheap. For further particulars write The Arthur Gardiner Garage, Kenosha, Wis.

**O**NE 1906 WHITE steam touring car, equipped with top, etc.; price, \$1,000. One 1906 Model "G" Franklin touring car, equipped with top; A-1 condition; price, \$850. One 1908 Model "10" runabout; used a few times for demonstrating; A-1 shape; price, \$850. One 1904 Cadillac touring car; good condition; price, \$350. 1907 Oldsmobile runabout. A-1 condition; price, \$1,800. One 1906 Model R Stevens-Duryea, overhauled and repainted; price, \$1,200. One 1907 White steam runabout, good condition; price, \$1,300. One 1906 Thomas with tourabout body; first-class condition; price, \$1,500. Halsey Automobile Co., St. Louis, Mo.

**P**EEPLESS "30" 1909.—Regular touring body, with removable glass enclosure for winter; especially fine job; cost \$5,400; family going abroad; will sell at a reduction. Address "G. R.," care The Automobile.

**S**TODDARD-DAYTON—Some slightly used cars for sale; runabout, roadster, touring car and limousine; in A-1 condition. The Dayton Motor Car Co., Dayton, Ohio.

**T**HOMAS 1907 DETROIT, 40 H. P., in excellent condition. Will sell cheap for cash. Write "H. L.," care The Automobile.

**T**HOMAS 1908, 6-cylinder, 70 h. p., 7-passenger touring car; top, glass front, 100-mile Warner electric lights; all accessories in excellent condition. Will sell cheap for cash. "A. L.," care The Automobile.

**W**ANTED TO SELL or exchange, demilimousine 30-35 Rainier, for a small runabout 1908 Buick. Gen. 86 Warren St., New York City.

**W**E HAVE for sale the following second-hand cars at bargain prices: 1907 Model D touring car; 1906 Model D touring car; 1907 Model G runabout. Franklin Automobile Company, 73d St., Amsterdam Ave. and Broadway, New York.

**W**HITE steam touring car, 1908 Model K, used only five months and in superb condition throughout; nicely equipped and will be sold at a bargain if taken at once. Address White Steamer, 1200 Niagara St., Buffalo, N. Y.

**W**HITE STEAMER, 30-h.p., Model G, with 1908 regulation touring body; this car cost \$3,750 without the extras; has fine leather top, Sprague wind shield, Jones speedometer, double tire holders, shock absorbers; car has been driven by the owner and is in fine shape; engine has been overhauled and is in perfect running order; the paint is a dark maroon with black stripes; the tires are practically new. Owner has ordered a new 1909 White. The first check for \$1,500 takes it. Address, 532 Canal St., New Orleans, La.

**W**INTON '06 four-cylinder touring car, in perfect condition, fully equipped, top \$800. The Fulton Garage, Fulton, N. Y.

**W**INTON SIXTEEN-SIX, 1908 model, nicely equipped and in absolutely fine condition; will accept \$2,400 if taken at once. E. R. Thomas Motor Co., Second-Hand Department, 1200 Niagara St., Buffalo, N. Y.

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**1908 MAXWELL**, Cameron, runabout and touring cars; 1907 Ford, Pullman, Stoddard-Dayton, Buick and Reo runabout and touring cars; 1906 Acme touring car; 1905 Rambler and Locomobile touring cars; get prices and specification forms. Berks Auto & Garage Co., Reading, Pa.

### Cars Wanted

**FOR EXCHANGE.**—Attractive motor boat, with standing top; length, 42 ft. 6 in., beam, 7 ft. 6 in., draught, 3 ft.; 40-h.p. Winton motor; Michigan reversible propeller; speed, 13 miles; built by Seabury & Co., hull and machinery in best condition; for 60-h.p. or 40-h.p., 6-cylinder, 1908 Pierce Arrow Automobile. Box 115, care The Automobile.

**H**AVE ABOUT \$500; want an automobile; must be 4-cylinder, shaft driven, sliding gear; no objection to one out of repair or broken, if of good make. Correspondence solicited. 725 E. Water St., Syracuse, N. Y.

**W**E WILL PAY full value in spot cash for your automobiles in quantities from one to one hundred. Call or mail descriptions. Broadway Mammoth Automobile Exchange, 245 West 56th St., New York City.

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**A LIMOUSINE BODY** for sale; in first-class condition; fits any car; cost \$2,200; bargain. 1225 McGee St., Kansas City, Mo.

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**AUTO TIRES,** new clincher casings, fresh stock, every one a bargain:

28x3	.....\$10.65	30x4	.....\$17.90
30x3	.....11.15	32x4	.....18.90
32x3	.....11.75	34x4	.....21.00
28x3½	.....13.00	36x4	.....22.00
30x3½	.....13.50	34x4½	.....21.50
32x3½	.....15.80	36x4½	.....23.50
34x3½	.....16.50	36x5	.....26.00
36x3½	.....16.50		

W. M. Sharpe, 118 West Broadway, New York City.

**BARGAINS** in new inner tubes; all guaranteed to hold air. Purchased at special sale.

28x2½	28x3½	30x4	.....\$2.50
28x3	30x3	30x3½	.....3.00
32x3½	32x4	34x3½	.....3.50
34x4	34x4½	34x5	.....4.00
36x3½	36x4	36x4½	.....4.50
36x4	36x4½	36x5	.....4.50

Write for prices on other supplies. We also repair any make of tire. All work guaranteed. Chicago Vulcanizing Co., 1400 Michigan Ave., Chicago, Ill.

**BOOTH'S FELT PACKINGS** for repairing automobiles are designed to retain the oil, exclude the dust and tighten loose joints, and are absolutely necessary in connection with ball, roller and plain bearings, hubs and transmission cases, and are made in strips and endless rings of any size and thickness to fit any car; dust rings for the hubs, strips for transmission cases, washers for all lubricating and dust-excluding purposes. I have dies to fit any bearing of any make of car, and can fill any order within twenty-four hours. You will get exactly what you want, and the price will be right. There are so many sizes, no dealer carries a full stock. Write for prices and give dimensions. N. E. Booth, 741 39th St., Brooklyn, N. Y.

**BRAKES.**—External double-acting band brakes; 939—9½"x1½"; 72—9"x2½"; 57—6"x2". No better made; will sacrifice to quick buyer. Address Blackwell Brake Co., Box 1031, Bridgeport, Conn.

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**FOLDING** wind shield, never used, fit any car; cheap; exceptional bargain. 130 W. 64th St., New York City.

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**FOR SALE OR EXCHANGE,** being overstocked; several standard high tension magnetos, also double ignition systems, coil and distributors. Wanted cash offer, or will accept in exchange, any standard tires (sizes wanted, 34x4 and 36x4½), or New Victor Talking Machines. Offer also wanted on a 1909 Continental car, valued \$3,500. Full particulars, address "Retired Auto Manufacturer," care The Automobile.

**FORD RUNABOUT** owners, now is the time to order our outfit to change your N. S. or R. into new "S" roadster, new fenders, and rumble seats, dash hoods, folding hoods, glass fronts, tops, ollers, magnetos. Write for catalogue to-day. Auto Rebuilding Co., 1349 Michigan Ave., Chicago, Ill.

**FOUR-H.P.** air-cooled engine, with drop-forged crank, one-piece cylinder and head, other valuable features, \$58. Climax Electric Works, New Salem, Mass.

## GOODS at less than manufacturers' cost!

Bevel gear axles, \$80 per pair; pressed steel frames, \$18; wood wheels, new, 28x2½, \$14 a set; Olds type axles, front, \$10; rear, \$25; tonneau top, upholstered in leather, \$60; four speed ollers, \$37.50; five speed mechanically-operated ollers, \$8; two cylinder Splitt-dorf dashboard coil, \$12.50; 28x3 tires, \$9; tubes, \$1.50; 12 tube radiators, \$6; hood radiators, \$20; Cotta transmissions, \$60; planetary transmissions, \$23; marine motors, \$28; Warner differential gears, \$9; cylinder ollers, 75 cents; 4½x5 water-cooled motors, \$70; wood wheels, 30x2, with solid tires, \$25; fenders, \$8 a set; 4½x4 air-cooled motor, \$75. Get our bargain sheet. Auto Parts Co., 52 W. Jackson Blvd., Chicago.

**NEW** five-barrel Bowser, Cut No. 41, self-measuring gasoline tank, with fixtures; tank was only buried a few days; liberal discount made from price paid. J. G. Turnbull, Orleans, Vt.

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**PROTECT YOUR TIRES** with Garlick Auto Props; strong and durable. Set of four, \$2.50; with jack attachment, \$4.00; fit any car. Garlick Auto Prop Co., Paterson, N. J.

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**RUMBLE SEATS** and "baby" tonneaus, for Ford, Maxwell, Buick, Cadillac and other cars, fenders, radiators, hoods. We are the big mail-order rebuilding house. Send for catalogue. Auto Rebuilding Co., 1349 Michigan Ave., Chicago, Ill.

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**SPECIAL LOT** supplementary springs, wind shields, storage batteries, tire treads, repair kits, boots and patches. Factory prices. Auto Economy Co., 1426 Michigan Ave., Chicago.

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30x3½	.....13.00	30x4	.....17.50
32x3½	.....16.00	32x4	.....19.00

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(Special Notices continued on page 60.)

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28 x 3	11.00	3.00
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32 x 4	20.00	5.50
34 x 3	9.25	3.50
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(Special Notices continued from page 59.)

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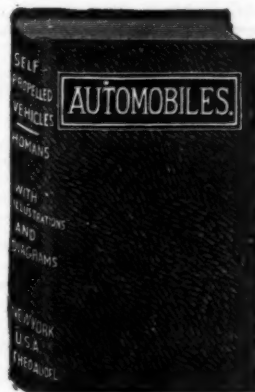
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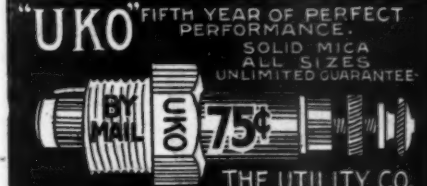


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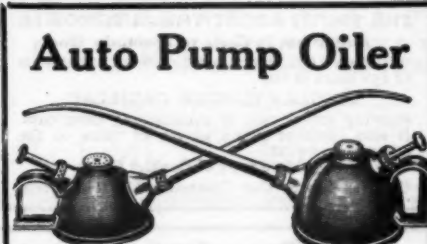


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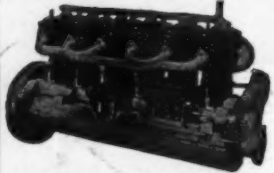
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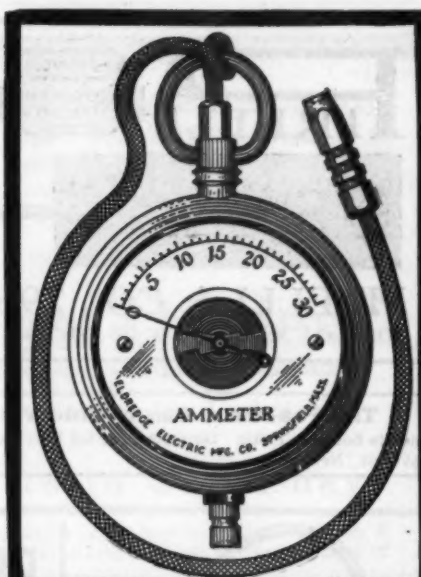
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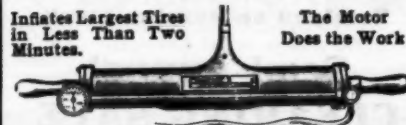
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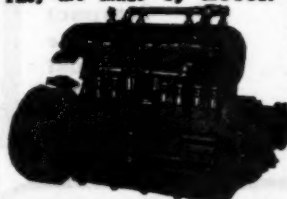
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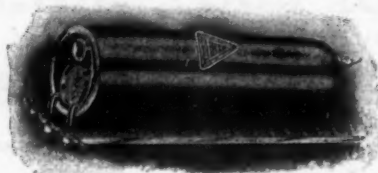


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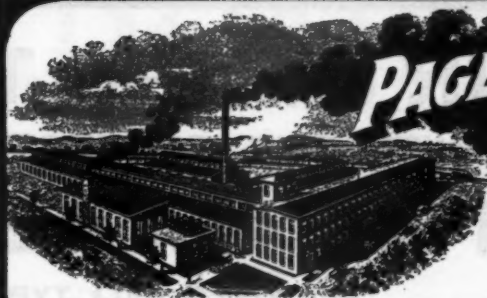
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Opinion by Judge Hale, of the United States Circuit Court, District of New Hampshire, dated Oct. 22, 1908.

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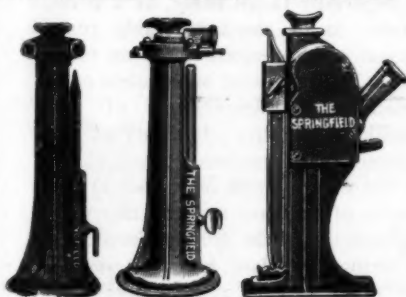


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After trying almost every known American chain with little success, I tried one of your Brampton chain on a Buick demonstrator, and same has been run over ten thousand miles, and not a broken roller or link has shown up, the chain holding its length no matter how hard the pull, and I have not been required to even lengthen the radius rods, although the car has been through Texas black lands, a foot deep in mud. This chain has been so satisfactory, I have equipped seven Buicks Model "F" cars, and there has not been one complaint as yet, although when my customers had American chains, there was always trouble from broken links and rollers.

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When your gasoline motor or gas engine gets stubborn, can be quickly learned by owning a copy of the

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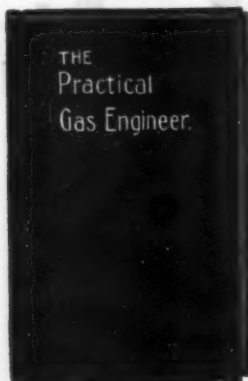
How to start, how to operate, and how to care for all classes of explosive motors or engines using gas, gasoline or similar fuels.

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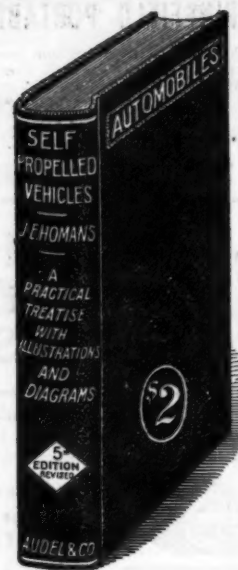
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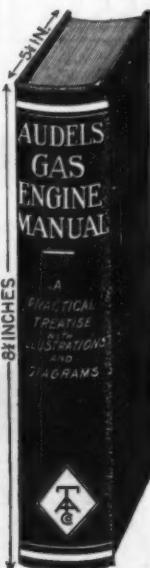
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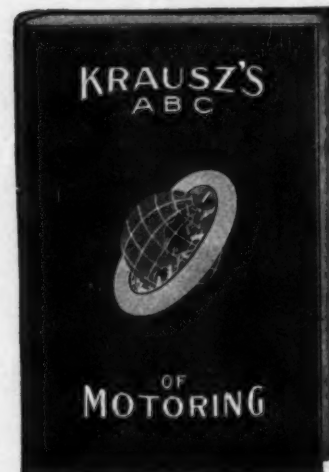
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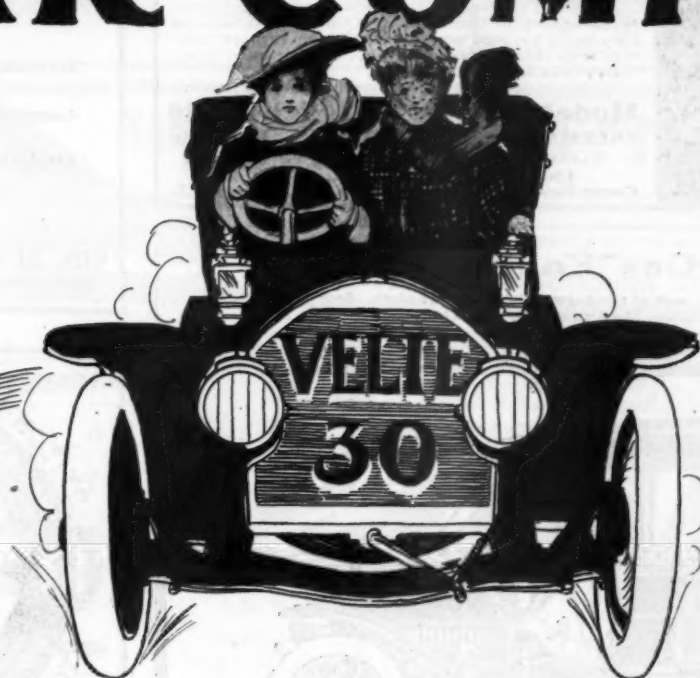
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The "VELIE 30" has a 30 H. P. Motor, Selective Type Transmission,  
Floating Type of Axle, 110-inch Wheel Base, Touring  
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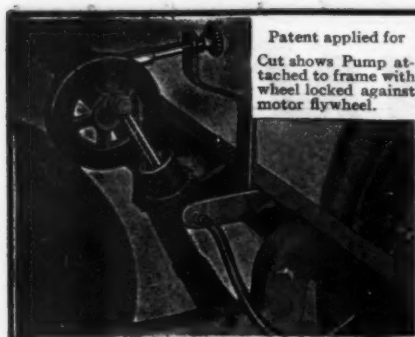
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Patent applied for  
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The Engine  
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Happy New Year

At least 75 per cent. of Auto owners spend much more on the upkeep of their tires than they should, because they find it too hard work to inflate them to proper pressure with the ordinary methods. An Eberman pump makes this easy.

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**Model A, \$15      Model B, \$20**

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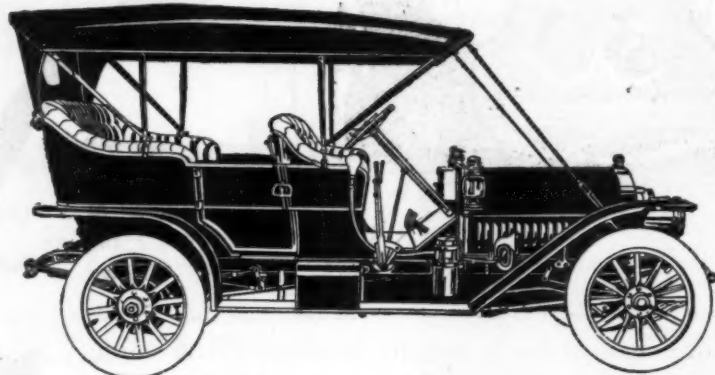
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The 1909

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**It sells at \$2,500 completely equipped,  
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for charging ignition batteries  
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Durable

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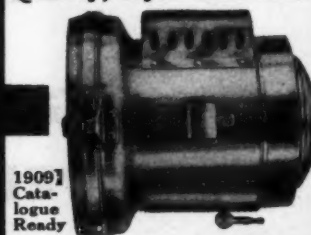
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As you know the whole value of a spark plug lies in its insulation. The "Schenectady" is perfectly insulated with a moulded compound that will not break under high voltage, nor has any of the faults of Porcelain or Mica. Is not affected by sudden changes of temperature; will not crack, break, absorb oil or dampness and is so designed that the explosion keeps it clean and free from soot. Price \$1.35. Examine it—you'll be interested. Write for one to-day.

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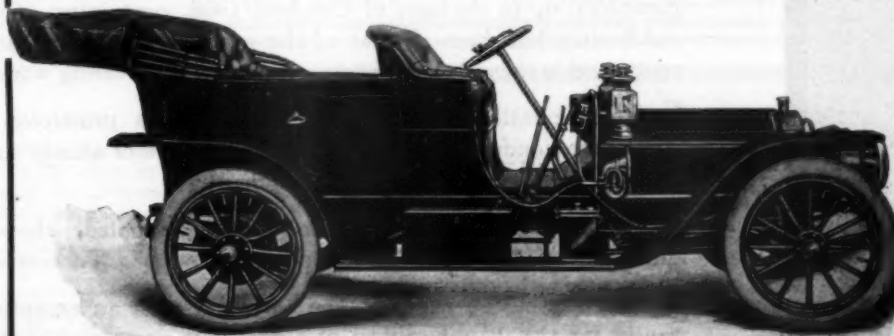
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**NOW**

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Any Size

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PUBLISHED QUARTERLY  
231-241 WEST 39th STREET  
NEW YORK

JANUARY, 1909

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\$5.00 PER YEAR  
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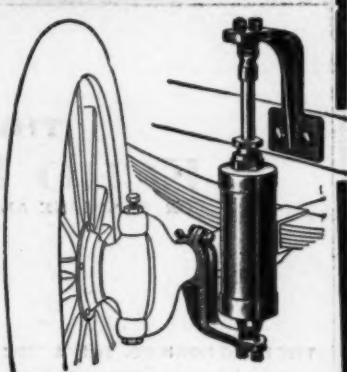
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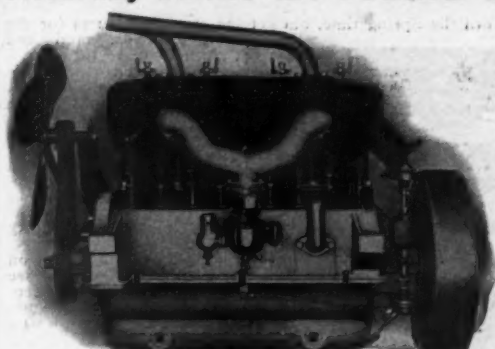
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Are the Most Economical. Do Not Deflate When Punctured.

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**THE GREAT WHITE LIGHT  
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cars to finish in the Grand Prize Race used

# MONOGRAM OIL

and the fact that they came in winners proved that it is

**THE BEST**

Manufactured Solely By

**The COLUMBIA LUBRICANTS COMPANY of New York**  
116 BROAD STREET MONOGRAM OIL is sold at all garages

# The REGAL



The Regal at \$1,250 has solved  
that eternal question of quality  
and price. The machine is free  
from any freakish ideas. It is  
simply a high-grade, honest car,  
sold at an honest price. They  
are built entirely from our own  
design and constructed in our  
own factory. Not thrown together

from stock parts. A year ago our competitors said a car like the  
Regal could not be built to sell for less than \$2,000.00. We proved  
it could and now others are trying to do it. We lead, others follow.  
Mr. Dealer: We have some unoccupied territory. Get our  
proposition before it is too late.

30 H. P., 4-cylinder, water-cooled, shaft drive, 3 speeds and  
reverse, selective type sliding gear transmission.

**Runabouts Tourabouts Touring Cars**  
**REGAL MOTOR CAR COMPANY, DETROIT, MICH.**



# Packard Ignition Cable

Finest Rubber Insulation protected by whip cord braids and an elastic enamel coating. Every foot tested to twenty times required voltage by our patented process

HEAT, OIL, GREASE AND WATERPROOF

THE PACKARD ELECTRIC COMPANY, 302 Dana Avenue, Warren, Ohio

## WESTON ELECTRICAL INSTRUMENT CO.

### Electrical Measuring Instruments

FOR USE IN

Electrical Carriages and in Charging Stations

Send for Catalogue

Main Office and Works,  
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London Branch: Audrey House, Ely Place, Holborn.  
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Combination Volt and Ammeter Model 36



Switchboard Instrument  
Model 150

### "The SYRACUSE" Special Auto and Boat Chemical Fire Extinguisher



Not Necessary to Remove Bottle from Bottle Holder when Recharging. Saves Time. No Danger of Burning Hands with Acid. Both Very IMPORTANT FEATURES in the Construction of a Chemical Fire Extinguisher.

will extinguish gasoline (or any other) fire instantly. The ONLY chemical hand extinguisher which is specially designed and practical for use aboard the auto or yacht. "The Syracuse" is not affected by heavy seas. Rough Roads have no effect on "The Syracuse."

Expensive fire insurance will not save life and property.—"The Syracuse" will do both at small expense.

It is absolutely certain to operate every time.

Write for full information and prices and special discounts to dealers.

**The SYRACUSE CHEMICAL FIRE EXTINGUISHER CO.**

Sole Manufacturers.

Factory and General Offices:

100 West Fayette St., Syracuse, N.Y., U.S.A.



Special Auto and Yacht Extinguisher with Adjustable Holder

## The HYDRO-PNEUMATIC SPRING is THE THING

Just  
Stop and Think

Will smooth  
down the  
roughest  
roads

Our Springs in connection with solid tires will make your car ride easier than with pneumatics, and consequently save all tire troubles and expenses, and eliminate all dangers connected with pneumatics. Guaranteed air tight forever.



For full information ask for booklets A and B

TROJAN HYDRO-PNEUMATIC WHEEL CO. (Inc)  
WATERVLIET, NEW YORK



## Don't Guess Which Tire Is Best— Here Is Proof

In New York City there are 1,000 Taxicabs.

On the tires, more than on any other one thing, depends the profit of the Taxicab business.

You may be sure that the owners of the 1,000 Taxicabs did not GUESS.

They TRIED all the tires that were offered, and checked them up with the TAXIMETER—which told them the mileage unerringly, indisputably.

There was no personal preference. No friendship. No prejudice. It was a cold-blooded BUSINESS test.

And the result: 800 out of the 1,000 Taxicabs in New York, operated by several competing owners, have contracted for Goodyear Tires to be used EXCLUSIVELY.

# GOOD YEAR

To understand why the Goodyear Tire stood head and shoulders above its competitors in this Taxicab test, you must understand, first, the difference between a moulded tire and a wrapped tread tire.

The moulded tire is built up, layer by layer, on an iron core. Over it is clamped an iron mould. When the heat of the curing process is applied, that rubber expands—and in expanding, forces a perfect union between the various layers of rubber and of fabric.

With the moulded tire, so far so good.

But in building up that tire on its iron core, a skilled workman lays fabric on fabric, rubber on rubber.

Yet, skilled as he may be, he cannot wholly avoid wrinkles, irregularities, unevenness, which, under the pressure of curing, multiply themselves into hidden weaknesses and defects.

Some tires, instead of being cured on an iron core, are cured on an air bag, which is really an extra strong inner tube.

When the air bag has been inserted in the built-up tire, strong tape is wound around it, and then it is cured in live steam.

The advantage of the wrapped tread process is that the air bag, full of compressed air, smoothes out these wrinkles and irregularities and prevents those hidden weaknesses and defects.

The advantage of the wrapped tread process is, for this reason, immeasurable.

But the tire made by this process does not get the terrific squeeze that the moulded tire gets when the heat expands it between core and mould—the squeeze that forces the rubber into the fabric, making a perfect union between fabric and rubber.

In losing that squeeze, it loses durability, strength, unity—which more than offsets the fact that the wrapped tread tire can have no hidden wrinkles or unevenness.

Obviously, the tire you ought to have is the one which is built up on an iron core, squeezed the same as a

moulded tire—and finished on an air bag to smooth out the irregularities.

There is just one tire made in this way—only one. It is the Goodyear Quick Detachable.

This one point of superiority is reason enough why the Goodyear Quick Detachable should have won the Taxicab test.

But there are other reasons—other superiorities.

The Goodyear Quick Detachable is, for example, an oversize tire.

The Goodyear tire is made larger than the specifications call for. It is simply 1½ larger than any other tire marked the same size.

Among the countless other Goodyear superiorities is the patent rubber-rivet breaker-strip, which makes it impossible for the tread to split or peel from the carcass of the tire.

Goodyear superiorities extend from the raw materials to the workmanship—from scores of exclusive Goodyear processes to the Goodyear planowire tape which would hold the tire on the rim, even if both the detachable flanges were off.

When you think of tires, think of that Taxicab test.

Those 800 Taxicabs in New York are doing 60,000,000 tire miles a year! More than 1,000,000 tire miles a week!

And what is true of the Taxicabs of New York is equally true of practically every large Eastern city where Taxicabs are used.

Eight out of every ten of them are using Goodyear tires exclusively.

Think of that, you who have bought tires because you have heard of their use on some tour or some race!

Think of that, you who blindly groped at the tire problem—you who have bought tires wholly by hearsay!

Don't you see, now, that tire-buying has been reduced to a business basis? Isn't the tire that the Taxicab took—Isn't that the tire for you?

A hundred times more about tire than can be explained here, can be found in our book, "How to Select an Auto Tire."

Send for it now. It is free.

**The Goodyear Tire & Rubber Co., Freedom St., Akron, O.**

**THE GOODYEAR TIRE & RUBBER CO., Freedom St., Akron, O.**

I want to know more about tires. Send on your free book, "How to Select an Auto Tire."

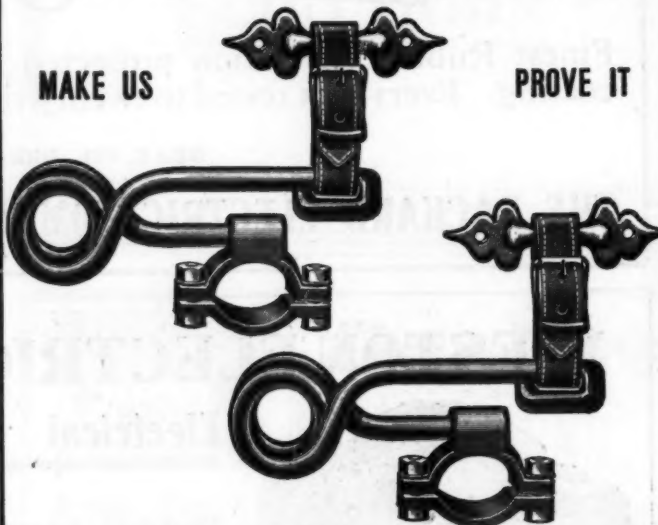
Name \_\_\_\_\_

Address \_\_\_\_\_

## THOMAS SHOCK ABSORBERS PREVENT SPRINGS BREAKING

MAKE US

PROVE IT



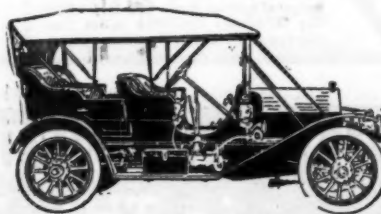
You don't have to BUY Thomas Shock Absorbers to TRY them. We will send them to you to use for 30 days, at our expense. If at the end of that period you do not believe that they positively eliminate upthrow, thus ensuring easier riding—more speed—less wear on tires—NO BROKEN SPRINGS and fewer repairs, just send them back. Could anything be fairer? Can we make our guarantee stronger? Remember you have nothing to lose—everything to gain. Send for full particulars—they are worth real money to you.

**BUFFALO SPECIALTY CO., 370 Ellcott Street, Buffalo, N. Y.**



### TYPE "C" FIFTY

Unchanged—is a model universally endorsed and effectively proved by its consistent winnings in all racing events for endurance, hill climbing and speed, during 1908.



**TOURING CAR OR BABY TONNEAU**

# \$3000

Bosch Magneto and Gas Tank

**Pennsylvania Auto Motor Company**  
Bryn Mawr, Penna.

## GET ALL THAT'S COMING TO YOU

When you buy your new car this year. Insist on getting a "Break Circuit Auto-Lock" as part of the regular equipment, to protect your car from theft. If they don't furnish you with one, the stolen car will be your loss, not theirs.

MEET US AT NEW YORK AUTOMOBILE SHOW IN THE GRAND CENTRAL PALACE, Dec. 31 to Jan. 8th, and we will tell you all about it. Will be glad to entertain you.

**THE SAFETY DEVICE CO.**

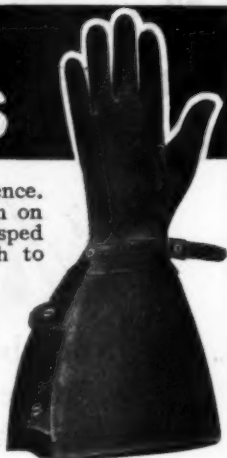
INDIANAPOLIS,

U. S. A.

## PRICE AUTO GLOVES

Embody remarkable features of convenience. Even when closed, the cuff is wider than on ordinary auto gloves, and when unclasped the folding gore allows sufficient width to readily admit the most bulky overcoat; it then snaps down tight and close. The automatic solid leather snap-strap at the wrist insures a snug, comfortable fit. On request, we will be glad to send our catalog showing the complete line.

**HENRY W. PRICE CO.**  
Dept. 25      ROCKFORD, ILL.



If you want an establishment which will handle your engraving promptly and furnish you cuts that will add 100 per cent to the selling quality and pulling power of your printed matter, send your orders to the

### MOSS PHOTO- ENGRAVING COMPANY

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NEW YORK

Engravings of every kind either in colors or black and white; as perfect cuts as can be produced for letter-press printing.



## The CAMERON 4-Cylinder Motor

This motor is more efficient under every condition than any motor of its size in the world. Have you ever seen a cleaner, simpler, more business-like looking automobile engine? The best of it is, it's just as good as it looks. It carries its load 25 to 35 miles per gallon of gasoline and 40 to 50 miles per PINT of lubricating oil, depending upon the gear ratio of the model in which it is used.

Model 14—4 cyl., 20-24 h. p. Runabout .....	\$900
Model 14—4 cyl., 20-24 h. p. Roadster (3 pass.).....	950
Model 15—4 cyl., 20-24 h. p. Featherweight Flyer (2 pass.)..	1,000
Model 16—4 cyl., 20-24 h. p. Baby Tonneau (5 pass.).....	1,100
Model 16—4 cyl., 20-24 h. p. Roadster (4 pass.).....	1,050
Model 11—6 cyl., 30-36 h. p. Touring Car or Roadster.....	1,500

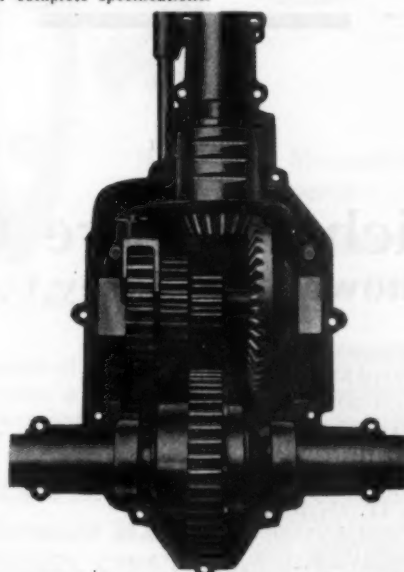
Equipment of all models includes 5 lamps, horn, tools and Remy High-Tension Magneto.

The oiling system used on all our motors is worthy of particular attention. Constant fixed level is automatically maintained in engine base by means of a gear pump. The system requires no attention whatever other than keeping supply tank filled.

The Cameron patented direct drive, three speed transmission is as far ahead of the regular planetary or sliding gear types as our motor is ahead of the "water boilers." Details of the system can be easily appreciated by referring to the cut. Our cars abound in refinements of every description, many of which are far in advance of present general practice.

There are no more better balanced, economical cars in the world than you will find in the 1909 Cameron line.

Send for complete specifications.



## CAMERON MOTOR COMPANY

Works: (SELLING AGENTS)  
BEVERLY MASS.      231 West 54th Street, NEW YORK CITY  
NEW LONDON, CONN.

# MICHELIN

First, as usual, at the  
Grand Central Palace Show

# MICHELIN

Tires on show cars

## 260

Nearest competitor 120

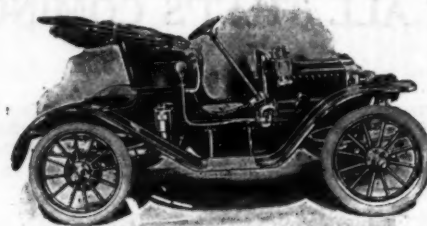
And more than the two nearest  
competitors combined

## WHY?

**Michelin Tire Co.**  
Milltown, New Jersey, U.S.A.

### BRANCHES:

NEW YORK, 1763 Broadway  
CHICAGO, 1344 Michigan Ave.  
BOSTON, 95 Boylston St.  
BUFFALO, 908 Main St.  
PHILADELPHIA, 320 N. Broad St.  
DETROIT, 247 Jefferson Ave.  
CLEVELAND, 2001 Euclid Ave.  
DENVER, 15 E. Colfax Ave.  
LOS ANGELES, 1200 So. Main St.  
SAN FRANCISCO, 308-314 Van Ness Ave.



The Aristocrat of Runabouts. Model LD., 2 cyl. 14 H. P.

**Twelve thousand  
Maxwell Owners  
Prove our Claims  
that**

## *“Maxwell”*

automobiles, though moderate  
in price, are made of as  
good material, with as careful  
workmanship under as rigid  
inspection, and are as durable  
as *should be* the best high-  
priced cars.

**Perfectly Simple  
Simply Perfect**

### 1909—The Maxwell Line—1909

4 Cyl. 30 H. P. Touring Car	- - - - -	\$1,750
4 Cyl. 30 H. P. Gentleman's Roadster	- - -	1,750
2 Cyl. 20 H. P. Touring Car	- - - - -	1,450
2 Cyl. 20 H. P. Roadster	- - - - -	1,350
2 Cyl. 14, Tourabout	- - - - -	825
2 Cyl. 10, Maxwell Junior	- - - - -	500

4 Cyl. 30 H. P. Touring Car, Model DA., \$1,750.



**Maxwell-Briscoe Motor Co.**

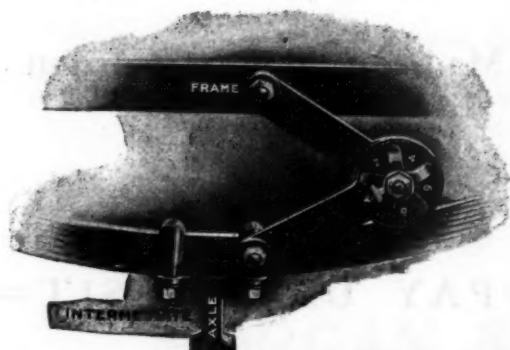
P. O. Box 10, Tarrytown, N. Y.  
Main Office and Factory

PAWTUCKET, R. I.

NEW CASTLE, IND.

**WE CAN PROVE YOU NEED A  
SET OF SHOCK ABSORBERS  
—Then, of course, it will be  
the  
TRUFFAULT-HARTFORD**

"The Standard of the World"



Automatically Lubricated, They Require No Attention

EVERY great speed contest, both in America and Europe, has been won by cars equipped with Truffault-Hartford Shock Absorbers.

For touring, they are a necessity—prevent the breaking of springs, prolong the life of tires and save YOU from the jars of rough roads.

Over twenty Automobile Manufacturers use them as standard equipment. Why? Because they know that their cars will give better satisfaction—ride more comfortably. That's the best proof we know that you need them too.

Order a set now—make your winter motoring a pleasure. A postal will bring full particulars. State make, model and year of car and let us advise you.

STANDARD, for cars over 1,800 lbs. (per set of four) . . . \$60.00  
INTERMEDIATE, for cars of 1,200-1,800 (per set of four) . . . 40.00  
JUNIOR, for smaller cars and Runabouts, weighing up to 1,200 lbs. (per set of four) . . . . . 25.00

**HARTFORD SUSPENSION COMPANY**

140 Bay Street, Jersey City, N. J.

Branches: NEW YORK, 212-214 W. 88th Street  
BOSTON, 319 Columbus Avenue

"It's nice to know how far you go;  
And this will show the speed,—also."

**Veeder  
TACHODOMETER**

**THE  
SCIENTIST'S  
SPEED  
INDICATOR**

Registers how far, total, and for each trip. Double scale shows each speed at all times, from zero to 62 miles per hour.

**ONLY SPEED INDICATOR THAT CAN BE ACCURATELY  
SET TO ZERO AT ANY TIME BY THE OWNER.**



**Ball  
Bearing  
Through-  
out**

**No Springs, Magnets or other  
variable elements.**

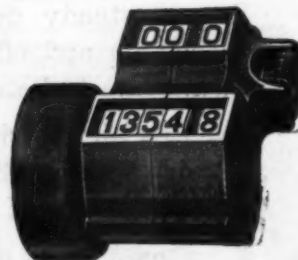
**No delicate mechanism.**

**Only One Moving Part.**

Price, complete, ready  
to put on any car \$50.00

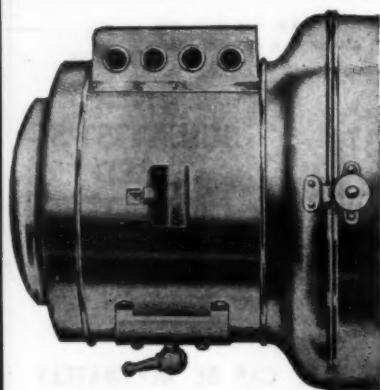
Thousands of Veeder  
Odometers in use to  
one of any other make.

**The Veeder Mfg. Co.,**  
22 Sargeant St.,  
HARTFORD, CONN.



Represented in Great Britain by  
Messrs. Mark & Co., Ltd., 6 City  
Road, Finsbury Square, London,  
E. C., England.

**FORM D or DASHBOARD ODO-  
METER.** Complete with flexible  
shaft and attaching fixture, ready  
to put on any car, \$25.00



**Lamp  
Equipments**  
AT  
**Popular  
Prices**

In the first place we make Lamps as well as they can be made; after that, we sell them at a very modest price, quite a low price, in fact.

May we send you a sample? So's you may inspect and know all about it.

We are especially proud of our lamps for moderate-priced cars.



**VICTOR LAMP CO., Cincinnati, O.**

**HARRIS**  
TRADE MARK-REG. U. S. PAT. OFF.  
**OILS**

MADE FAMOUS  
BY  
**1908 Racing Events**

YOU MAY SEE THEM NEXT

AT  
**Madison Square Garden**

Elevated Platform

Space No. 159

January 16 to 23

**==PAY US A VISIT==**

**A. W. HARRIS OIL CO.**  
PROVIDENCE, R. I.

**Prest-O-Lite  
Gas Tank**



**The Light That Fails Not**

Strong, steady dependable light,  
turned on and off like a gas jet.  
Clean, safe and economical.

Used by all experienced motorists.  
Refilled tanks obtainable every-  
where. Beware of imitations.

**The Prest-O-Lite Co.**

New York, 1204 Broadway  
Indianapolis, 209 E. South St.  
Philadelphia, Race and Carlisle Sts.

Boston, 607 Boylston St.  
San Francisco, 500 Van Ness Ave.  
Toronto, 6 King St. W.

**2500 Exchange Agen's**

**"THE STAR"**



Scale 50 miles. Price \$25.00.  
STYLE No. 960

The best popular priced Speedometer on the market. We give 30 days in which to prove it. Write for Catalogue and full particulars.

**STAR SPEEDOMETER COMPANY, Danville, Penna.**  
New York City, 1679 Broadway. Boston, Mass., 222 Elliot St.  
Phila., Penna., Geo. W. Nock Co., 126 N. 4th St.

## HOW THE "GOODNESS" IS PUT INTO MORGAN & WRIGHT TIRES

1. By using only the best grade of pure Para rubber and finest quality of long Sea Island cotton fabric it is possible to buy.
2. By employing the most experienced help to be had, going on the principle that with materials of a high grade the quality of a completed tire is dependent upon the amount of brains put into its making.
3. By making them in the light of twenty-eight years' experience in the manufacture of rubber goods.
4. By making them in the newest and best equipped rubber plant in the world.
5. By adhering to this unvarying rule: That *every* tire that leaves the factory shall be as perfect in material and construction as money and skill can make it.

If you want your tires made that way, why not specify Morgan & Wright's on your car for next year? They cost no more than other brands.

**MORGAN & WRIGHT, Detroit**

## The Unisparker

### A Simplified Form of the Atwater Kent Spark Generator

Every owner of a car with batteries and trembler coils has wished for a more reliable ignition system. Those who have tried the Atwater Kent Spark Generator have pronounced it the cure

of all their troubles. But, to the owner of a car already built, the gear-driven Spark Generator is sometimes troublesome to install.

To meet the demand of those wishing a simple and easily applied apparatus we have arranged the Contact Maker—the vital element of the Spark Generator—in a form attachable to any convenient half-time shaft, exactly like the ordinary timer. Combined with it is a compact Distributor. The Coil is separate and goes on the dashboard. On it is a kick switch with special contact for starting on the spark.

The greatest merit of the Atwater Kent Spark Generator is not its battery economy—high though that is—but its extraordinary *reliability*. In the UNISPARKER we place that unique advantage within the reach of every owner of a car.

#### Prices of UNISPARKER and Coil:

6 cylinder, \$50; 4 and 3 cylinder, \$45; 2 cylinder (switch not self-starting), \$35. Collar for attaching to half-time shaft, 50 cents additional. Specify size of shaft and direction of rotation (clockwise or counter-clockwise) when ordering.



**Atwater Kent Manufacturing Co.**  
N. Sixth St. Philadelphia, Pa

# GABRIEL 1909



In order to maintain the high standard which the products of our factory have acquired, many improvements have been made in the 1909 models of The Gabriel Horn, The Gabriel Shock Absorber and The Gabriel Cut-Out Valve. Gabriel Products still set the pace which competing lines try to follow.



### A POLITE REQUEST

The rich, mellow notes of THE GABRIEL HORN act as a polite request, not a harsh demand. It warns without frightening. By a new device its sweet musical three note tone used for city purposes can be caused to rise in unison for a penetrating warning on country roads. The Gabriel Horn is used exclusively on the personal cars of King Edward of England, Emperor William of Germany and other crowned heads of Europe.

### 1909 GABRIEL HORN AND CUT-OUT VALVE

We have perfected a new valve which is used both for operating exhaust horn and for cut-out purposes. For cut-out purposes remove the disc in main channel, thereby relieving back pressure from muffler through additional opening of 1 1/4 inches. Made to fit exhaust pipes 1 inch to 2 1/2 inch outside diameter. Warranted not to stick under any condition.



### GOING UP

is pleasant enough, but coming down with a thud is what makes the nerves quiver and cry for

### 1909 GABRIEL SHOCK ABSORBERS

A retardating friction gradually applied in proportion to the shock takes up all jolts and jars, and makes riding over rough roads or bumpy pavements a positive pleasure. The 1909 Model has improvements which give increased bearing surface, eliminate noise or rattle and greatly increase its efficiency and durability. Thermoid used for friction pad. Can be attached to any car or any type of spring.



Write for booklet illustrating and describing our 1909 products.

**GABRIEL HORN MFG. CO.**  
1410 East 40th Street  
CLEVELAND, OHIO

## CONNECTICUT



**IF it's a COIL (1, 2, 3, 4 or 6 Cylinder), Distributor, Timer, Terminal, Coil Current Indicator, Ammeter, Switch or Exploring Lamp, we have them in Quality a little better than the best**

SEND FOR CATALOG 13-B

**CONNECTICUT TELEPHONE AND ELECTRIC CO.**  
50 Britannia Street MERIDEN, CONN.



## Ninth National Automobile Show

*Madison Square Garden*

January 16 to 23, 1909, New York City

Under the Auspices of the

## Association of Licensed Automobile Manufacturers

Exhibiting standard Gasoline Cars licensed under the Selden patent

### *LICENSED GASOLINE CARS*

Apperson	Columbia	Hewitt	Packard	Royal Tourist	Stevens-Duryea
Autocar	Elmore	Knox	Peerless	Sampson	Studebaker
Buick	E-N-F.	Locomobile	Pierce Arrow	Selden	Thomas
Cadillac	Franklin	Lozier	Pope Hartford	Simplex	Walter
Chalmers-Detroit	Haynes	Matheson	Pope Toledo	Stearns	Waltham
Corbin					Winton
Anderson	Bailey	Champion	<i>ELECTRIC</i>	Studebaker	Woods
Babcock	Baker	Columbia	General Vehicle Co.	Waverly	
			Rauch & Lang		

### *STEAM*

White

*Complete exhibit by the Motor & Accessory Manufacturers. The only complete Motorcycle exhibit in New York, by the Motorcycle Manufacturers' Association, Commercial Vehicles, Town Cars and Taxicabs.*

**SOON OR LATE  
YOU ALSO MUST USE  
HESS-BRIGHT PRODUCTS**

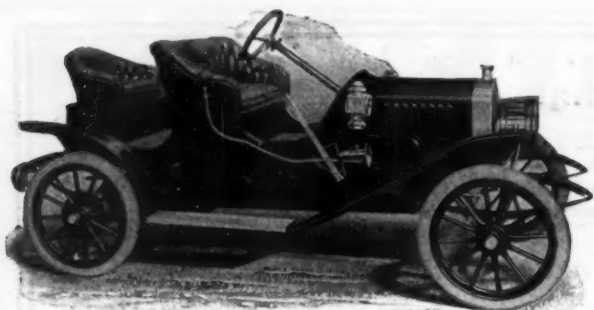
**BALL  
BEARINGS**

**WHY?  
BELOW**

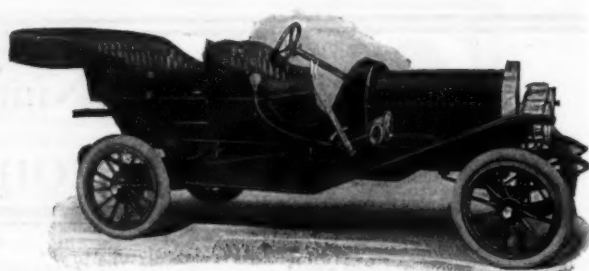
**MAGNETOS**

Because of the HB determination (backed by the most complete specialized ball bearing plants in the world) to build always nothing but the best.

**THE HESS-BRIGHT MANUFACTURING COMPANY**  
2106 FAIRMOUNT AVENUE, PHILADELPHIA, PA.



Model A-1. \$800



Lambert "30." \$1250

## LAMBERT FRICTION-DRIVE CARS

### The Economical Lambert

**T**HE LAMBERT is a simple car—correct in principle and design, sturdy in construction. It is as reliable, as **sure-going** as a car can be made.

There is just one thing that makes possible the manufacture of so good a car as the Lambert Car at a cost permitting us to sell it at the **low price** we do.

This one thing is the **Lambert Friction Drive** transmission. The cost of producing this **most efficient (proven)** transmission is so much lower than the cost of **any** type of the complicated gear transmission that we can—and do—put more real automobile worth into

every Lambert Car than the manufacturer of **any** gear-transmission car can give for the same money.

The Lambert Car—each of our six models—has a full dollar's worth of power, speed, endurance, style and finished for every dollar of the price—and more too—if judged by ordinary standards. Each Lambert model—from the \$800 Runabout Model A-I up to the big roomy 7-passenger Lambert at \$2000—is a positive leader in its class—the choice of people who "find out" **before** they buy.

### Our 1909 Proposition to Agents

We offer an exceptional proposition to agents and dealers in territory not now occupied by Lambert representatives. The demand for **good** automobiles at a low price cannot be denied.

We want the right kind of men to represent the **best** low-priced car—the Lambert Car.

In writing for full details please state what cars you are now handling and what your facilities are for taking care of our interests.

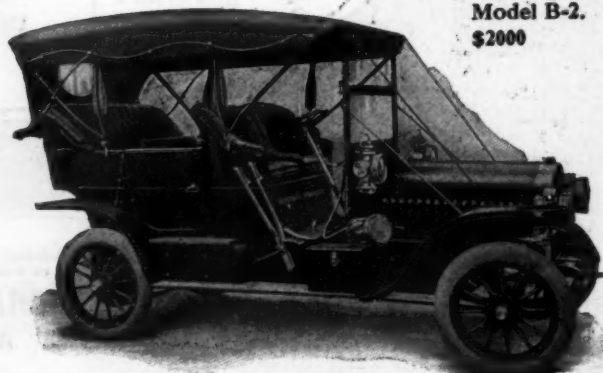
ADDRESS

## Buckeye Mfg. Co., Anderson, Ind.

1815 Columbus Avenue



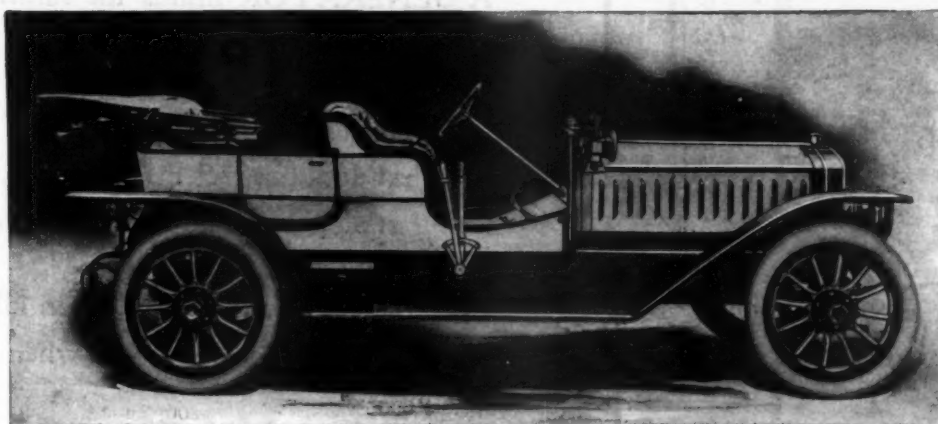
Model 19. \$1750

Model B-2.  
\$2000

# "AUSTIN"

*The Car That "JUST SUITS" Everybody*

Here's the New Car They Are All Talking About—Model "45"



**Six Cylinders, 45-50 H. P., 2250 Pounds, \$3,000.00**

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Meet us at the Grand Central Palace Show, New York City, Dec. 31st to Jan. 7th. Meanwhile, send for our Advance Circular and complete description of our 1909 Models.

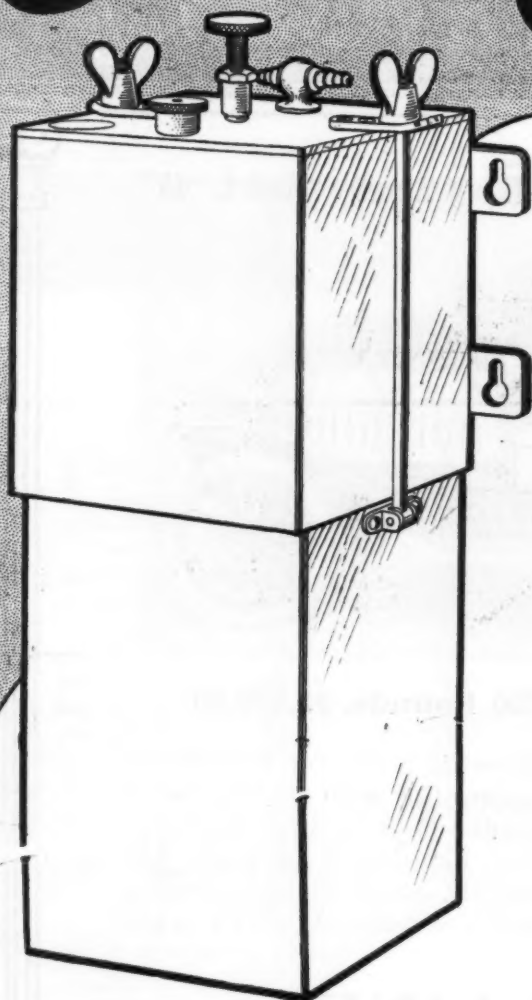
Standard Manufacturers A. M. C. M. A.

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A GENERATOR minus the familiar frailties of the generator kind.

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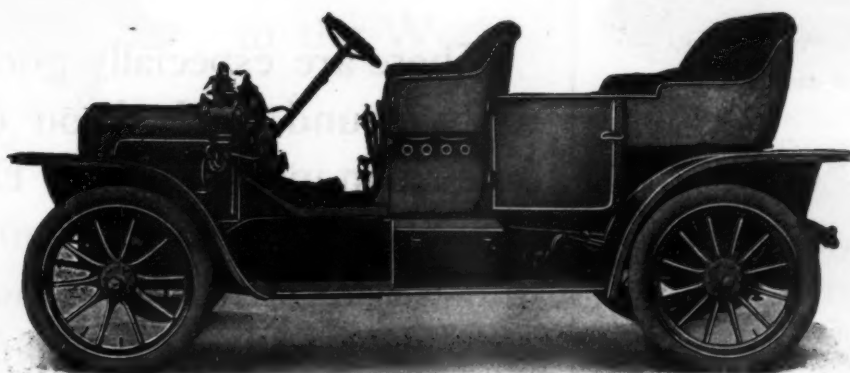
We commend to your careful study the RUSHMORE AUTOMATIC SHAKING GRATE GENERATOR, No. 2. The new catalog describes it fully.

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The White is the only car which is not a copy or an imitation of some foreign product. In almost every class of machinery—typewriters, sewing machines, agricultural implements, machine tools, etc.—American ideas of construction have eventually proved triumphant, and so it is with the White Steamer. The White is sold in quantities abroad in competition with the home product and, as regards this country, there are more Whites in use than any other make of large touring car.

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**Jackson**  
AUTOMOBILES

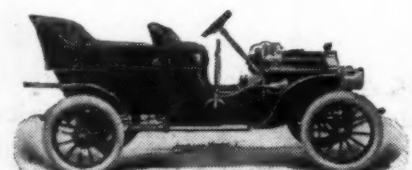
**Season  
of 1909**



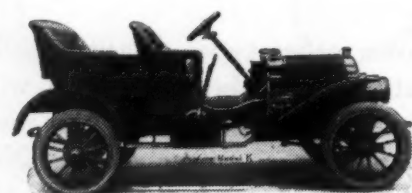
Model E \$2000. 4 cyl.



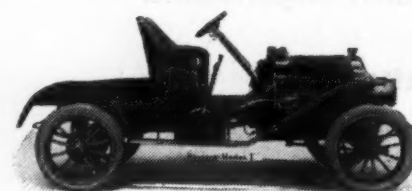
Model H \$1600. 4 cyl.



Model C \$1250. 2 cyl.



Model K \$950. 2 cyl.



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If you want a clean cut, up-to-date, snappy, reliable line of cars—a complete line—a dependable line it is pleasant and profitable to sell—get the JACKSON Agency!

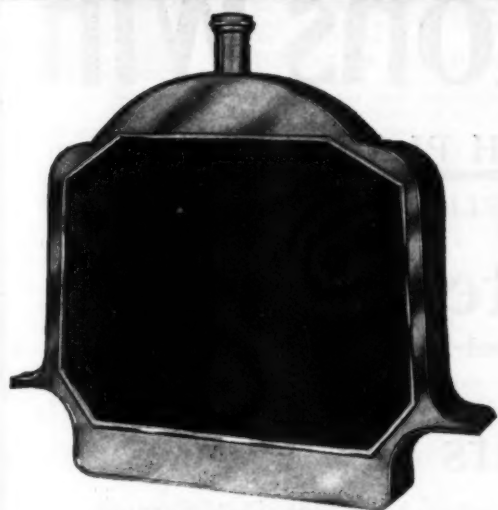
There are especially good features to be found in Jackson cars which give them individuality. Every point is made a substantial point. Every unnecessary frill is cut out. Every possible provision is made for the comfort of those who ride in Jackson cars—notably our Jackson special full elliptic springs, front and rear, made right and tempered right in our own spring plant. Jackson cars are not only practical in every sense, but luxurious in their easy riding qualities.

1909 Models will be exhibited and demonstrated at the  
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No Sand Too Deep—  
No Hill Too Steep

**JACKSON AUTOMOBILE COMPANY**  
JACKSON, MICHIGAN

# Briscoe Manufacturing Company



HONEYCOMB

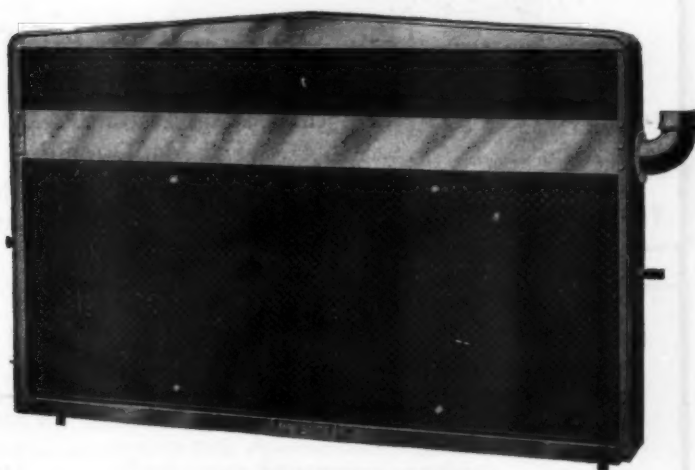
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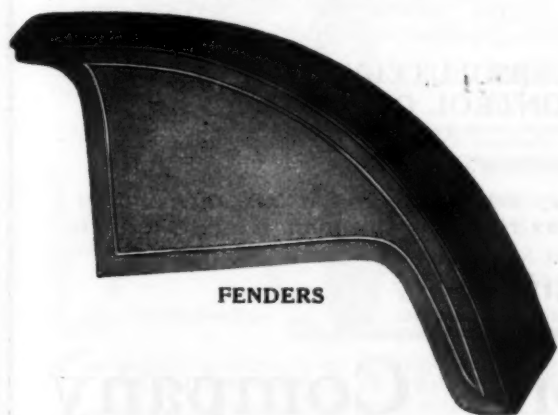


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# Three Mathesons Win

**FIRST, THIRD and FOURTH PLACES**

in capturing MacDONALD & CAMPBELL \$600 Cup

## 300 Miles Mid-Winter Contest

From Philadelphia to Wilkesbarre and Return

Over the Pocono Mountains, making also the highest team score against a field of

## 32 Contestants

including these cars: 2 Peerless, 1 Stearns, 1 Studebaker, 2 Cadillacs, 1 Acme, 3 Stoddard Daytons, 1 Elmore, 2 Franklins, 3 Mitchells, 2 Wintons, 3 Oldsmobiles, 2 Maxwells, 2 Knoxes, 2 Ramblers, 1 Buick, 1 Premier.

Only three of the thirty-two cars had perfect time scores and these three were Mathesons

### No. 7 Matheson Wins First Place

For MacDonald & Campbell \$500 Cup

This car, owned and entered by Mr. F. M. Kirby, Wilkesbarre, Pa., and driven by Mr. Kirby's chauffeur, William Miller, is a regular stock Matheson touring car which Mr. Kirby had driven over 7,000 miles prior to entering it in the contest. Actual running time, 5 hours and 31 minutes, breaking all previous records.

### No. 15 Matheson Wins Third Place

This car, entered and driven by Mr. Ross Anderson, Wilkesbarre, Pa., was a regular stock Matheson touring car which had covered 18,000 miles in service prior to entering this contest. Actual running time, 6 hours and 4 minutes; also new record time.

### No. 6 Matheson Wins Fourth Place

This car, entered by ourselves, was a regular stock Matheson touring car which had covered over 12,000 miles in service prior to entering this contest. Actual running time, 5 hours and 24 minutes, the fastest time ever made by any car over this course, Summer or Winter.

**ALL THREE MATHESONS FINISH WITH ABSOLUTELY PERFECT  
ROAD SCORES, MAKING EVERY CONTROL ON TIME**

Only one stop was made on account of tire trouble, proving our claim that the Matheson Car, due to its beautiful balance, chain drive and multiple disc clutch, is the easiest car on tires. Our customers usually cover from 5,000 to 10,000 miles on their original tires.

**THE CONCLUSION:** *The Matheson Car has proved in every endurance run it has entered that it is far and away the most reliable and serviceable as well as the most economical and the fastest touring car in all the world.*

**AND THIS IS ALSO OUR GUARANTY**

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Members A. L. A. M.



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Over 5000 in use and not 2 per cent. ever returned for repairs. Written guarantee with every instrument.

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In ordering, give make, year and model of your car. See "The Automobile," Aug. 27, for full particulars.

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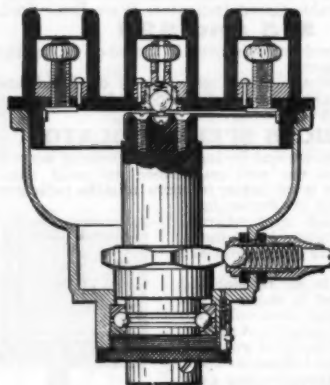
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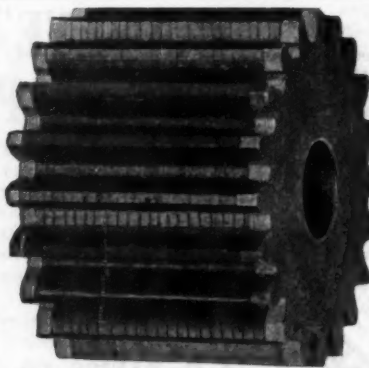
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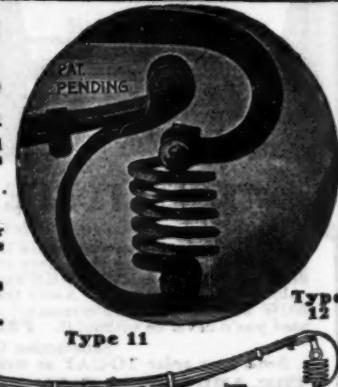
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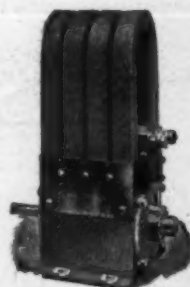
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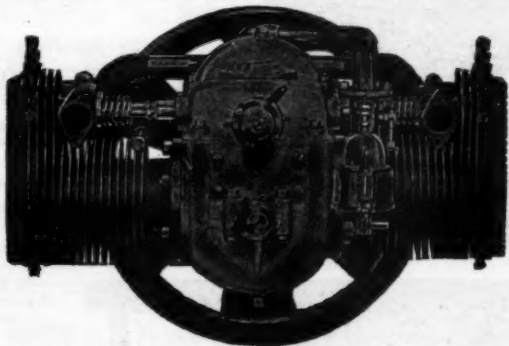
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## That New York To Paris Race



THE THOMAS FLYER which beat them all across the country was equipped with a FEDDERS SQUARE TUBE RADIATOR. It stood the bumps without injury. It never needed repairs and the car never overheated. But FEDDERS RADIATORS are made for just this kind of work, they stand the racket.

"Ask the chauffeur"

**FEDDERS MFG. WORKS**  
BUFFALO, N. Y.

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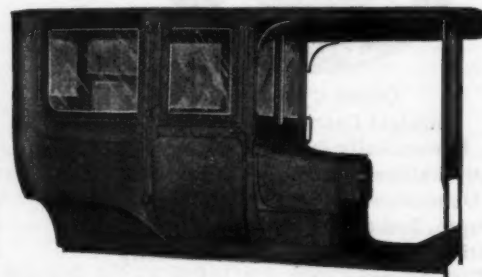
The Finest Lubricant and Greatest Trouble-saver at present, or likely to be, produced. Name your car and we'll send sample and tell you why OILZUM is OIL-RIGHT.

**The WHITE & BAGLEY CO., Mfrs.**

WIGNEY & TOMLINSON, Const Agents,  
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In Both  
Aluminum  
and  
Wood Panels

Limousine,  
Landaulet,  
Taxicab and  
Touring Cars  
in the white  
or painted  
and trimmed  
complete.

Also  
Automobile  
Tops

**Schubert Bros. Gear Co.** 44 Cedar Street  
ONEIDA, N. Y.



The Stepney Spare Motor Wheel is a device the adoption of which will serve to obviate the tire troubles experienced in motoring.

It is simply a standard clincher steel rim, without hub or spokes, having four clamps (two stationary and two adjustable) for securing it to the rim of the injured wheel.

The Stepney is intended for your Spare Tire to be carried upon it fully inflated and ready for use. Any standard clincher tire can be used.

Write to-day for catalog B.

**The SPARE MOTOR WHEEL CO. of America (Ltd.)**  
236 Michigan Avenue, Chicago

1909 PROMISES TO BE A BIG YEAR. YOU CAN "MAKE GOOD" ON ITS PROMISE WITH

## THE GAETH

The best car of its class on the market. A representative line—including seven-passenger Touring Car, Short-Coupled Body, Tourabout and Limousine. \$3,500 the price. Write to-day for agency proposition and ask for a copy of our 1909 catalog, just off the press. Address Dept. A.

**The GAETH AUTOMOBILE CO.**  
CLEVELAND - - - OHIO

MEMBER A. M. C. M. A.



**"UNIVERSAL"**  
**DETACHABLE FULL TREAD**

YOU NEED IT! HERE IT IS!  
The only tread on the market having an **ADJUSTABLE TENSION ANCHORAGE**.

Unlimited **TENSION**. Always Adjustable. Our Positive **ANCHORAGE** ELIMINATES TIRE INJURY. A Real **PROTECTOR**; ABSOLUTELY NON-SKID AND PUNCTURE PROOF. The **SAFE** AND **SANE** PROTECTOR for all road conditions.

Write to-day for Descriptive Circular and prices.  
**UNIVERSAL TIRE PROTECTOR CO.**  
ANGOLA, IND.



One of the features of the Grand Central Palace Auto Show, opening in New York City on New Year's eve, will be the exhibit of the famous "**MIDLAND MOTOR CAR**." For its lightness, its enormous power and speed, the **MIDLAND** at \$2,250, has few rivals in the American field to-day. Its friends say of it that it's "Made right looks right and stays right."

**MIDLAND MOTOR CO., Moline, Ill.**

I HAVE A NORTHERN LIMOUSINE which, for the best of reasons, I want to sell quickly.

It is in perfect condition, having been driven less than 500 miles, and I think it's one of the swellest-running, handsomest-appearing town cars made.

Tires are brand new and the varnish isn't damaged—in fact, the car is just as good as new, when it sold for \$2500, and I'll sell it for half—\$1250.

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**\$11,000,000**  
Worth of experience behind the new  
**\$1,500 Mitchell**

This price includes \$300 worth of extra automobile value not included in other cars selling at this price. Learn what it is.

Write to-day for detailed description.

**Mitchell Motor Car Co.**  
539 Mitchell Street, Racine, Wis.  
Standard Manufacturers A.M.C.M.A.

**ONE QUALITY FOR ALL MODELS**  
**ONE PRICE FOR ALL BUYERS**

## Stoddard-Dayton

Touring Cars, Roadsters, Runabouts, Limousine, Coupe and Landulet. A Line of American cars that **STAND OUT** :: Write for '09 Catalog

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Parts for Power Wagons.

Heavy and Light Electric or Gasoline.

Equipment "L" makes the best Light Electric Delivery yet produced

Sold by **THE AMERICAN DISTRIBUTING CO., American Trust Bldg. CLEVELAND, OHIO.**



### THE PERFECT ELECTRIC COUPE

Perfect in every department—as cozy and luxurious as any woman would have it—as able and efficient as any man would demand it to be.

Nothing is skimped in this car.

It is by far the handsomest coupe on the market to-day.

Write for our catalog describing mechanical features that will at once convince you that it's the soundest and strongest car of its kind in America.

See our exhibits at the New York and Chicago Shows. See if you know of a car half so good.

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55 YEARS' EXPERIENCE BUILDING FINE CARRIAGES

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Send 25 cents in stamps to cover cost of mailing and we will send you a beautifully illustrated book on the New York-Paris Race

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Member A. L. A. M.

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Roadster, Underslung Chassis, Four Cylinder, 50-60 H.P., \$3,750.

It was inevitable that the American line should be the center of interest at the Palace Show—more particularly to those to whom the finest in motor cars appeals. If you were not at the show, you owe it to yourself to get the 1909 literature, and that at once.

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Standard Manufacturers A. M. C. M. A.

The Car with  
the Friction  
Drive

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Write  
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No gears to strip

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Only one lever

The most simple, practical, all-around serviceable car built for \$1,350

**The Cartercar Co., Detroit, Mich.**

## LONG LIFE IS WHAT EVERY MOTORIST WANTS IN HIS CAR

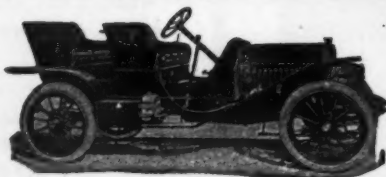
If it is a



imported ball bearings used wherever practical assure him of this result. Ask owners of Corbin cars how they stand up in every-day use or write for our testimonial booklet.

**The Corbin Motor Vehicle Corporation**  
New Britain, Conn.

## Moline "1909"



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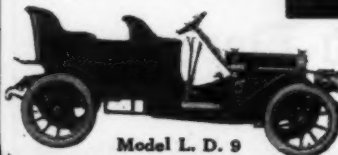
The numerous points of merit comprised in the "Moline" Roadster Model "S." We invite comparison, and it will

be a pleasure to show why you can not afford to overlook a car pleasing in appearance, but doubly attractive in ability and low cost of general up-keep.

**MOLINE AUTOMOBILE CO. Member A.M.C.M.A. E. MOLINE, ILL.**

Model L. D. 9, 4 cylinder—30 H. P. Roadster \$1,350—Touring Car \$1,500.  
Model D. 9, 4 cylinder—40 H. P. Roadster and Touring Cars \$2,000.  
Model G. 6 cylinder—60 H. P. \$3,000.

## KISSEL CAR



Model L. D. 9

See our exhibits at New York and Chicago Shows

Model L. D. 9. Selective type transmission, Timken roller bearings, 2 elliptic springs, floating type rear axle. Remy magneto with single non-vibrating coil and dry cells.

Model D. 9 and G. Remy magneto with single unit coil or Atwater-Kent generator and dry cells.

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## Motoring Satisfaction

with Stearns Cars is Genuine



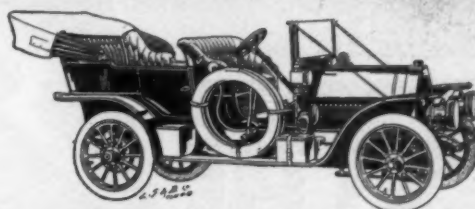
OUR 30-60 H. P. Model is ideal for those devotees who appreciate abundant reserve power, and a car as nearly perfect as is humanly possible.

Catalog upon request

**The F. B. Stearns Co.**

Member A. L. A. M.

Cleveland, Ohio



## THE "JEWEL 40" TOURING CAR

### SPECIFICATIONS

**MOTOR**  
**IGNITION**  
**MAGNETO**  
**COIL**  
**BATTERY**  
**LUBRICATION**  
**TRANSMISSION**  
**BEARINGS**  
**WHEEL BASE**  
**WHEELS**  
**TIRES**  
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**FRONT AXLE**  
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**EQUIPMENT**

Rutenber. 4 $\frac{1}{2}$ " bore, 5" stroke.  
Two independent systems.  
Bosch. Type H. D. h.  
Connecticut.

Exide.  
Self-contained system.  
Selective type.

Timken

120"

36"

4" front, 4 $\frac{1}{2}$ " rear. Any make.

Pressed steel.

Semi-elliptic front, platform rear.

One piece forging, I-section.

Full floating clutch driven type.

Two on each rear wheel.

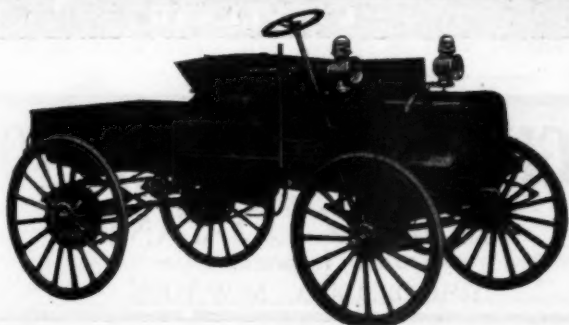
Seven passenger.

Two gas lamps, two side oil lamps, tail light, Prest-O-Lite Gas Tank, Hartford Shock Absorber, tire irons, trunk rack speedometer and clock.

Write for 1909 Catalog

**THE JEWEL MOTOR CAR COMPANY**

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does the work of two horses at less than the cost of keeping one.

### Simplest and Most Practical Engine in the World

two-cycle, air cooled. Not a delivery body with a touring car power plant, but built for business purposes only in a plant that makes nothing but business wagons.

### Runs Twelve Miles An Hour—No Faster

You can't speed the Chase Motor Wagon, but it will run twelve miles an hour just as long as there is gasoline in the tank.

**10 H.P. \$750.00. 15 H.P. \$900.00**

Full particulars cheerfully given on request.

**CHASE MOTOR TRUCK CO.,** 336 S. West St. SYRACUSE, N. Y.

We exhibit at Grand Central Palace Show, New York; also the Chicago Show and the Boston Show

**LOOK!**  
**READ!**  
**\$15.00**



## PEERLESS SPEEDODOMETER

with a 3-inch speed dial and hand reading from one to sixty miles, 10,000 season and 100-mile trip odometer complete with everything ready for attaching, \$15.00; with maximum hand, \$18.00.

This EXCEPTIONAL offer for advertising purposes on our regular \$30.00 instrument holds good until May 1st.

We have extended our special offer to above date by request of numerous prospective customers, who have not bought their cars.

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## EVERY AUTOMOBILE AT THE SHOW

Will sooner or later be groomed with Cleanola

Nothing like Cleanola for cleaning and polishing all varnished surfaces. Removes mud stains and rain spots. Covers varnish cracks and scratches. Leaves hard, lustrous surface. Cleanola can be used with equally good results on Leather Tops



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Used by principal Railroads and Palace Car Companies.

CLEANS, POLISHES, RENEWS, PRESERVES

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25c. can sent as sample for 10c. postage and dealer's name.



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STRENGTH, ACCURACY AND DEPENDENCE

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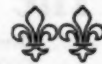
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### Construction of a Gasoline Motor Vehicle

By C. C. BRAMWELL. Contains 150 pages, 6x9; one hundred illustrations and diagrams. Publisher's price, \$2.00; our price, 50 cents. Address Book Department, The Automobile, 231-241 West 39th St., New York.



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**EMPIRE AUTOMOBILE TIRE COMPANY, Trenton, N. J.**

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IN QUALITY, TRY THEM  
INDIANAPOLIS, IND.





1908 Model L—4 cyl. 20 H.P.  
**\$1500**

**Pullman Automobiles**  
We will shortly announce our complete line for 1909.  
RUNABOUTS    TOURING CAR  
TAXICABS       LIMOUSINES  
See that your name is on our mailing list. Advance catalogs now ready.  
**York Motor Car Co., York, Pa.**



1908 Model K—4 cyl. 30 H.P.  
**\$2000** including Bosch Magneton

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KRUPP AUTOMOBILE CRANK SHAFTS, STEEL FORGINGS AND FRAME MEMBERS, GEAR BLANKS, KRUPP BAR STEEL BALL MILLS, TUBE MILLS AND OTHER MACHINERY



**Chrome Nickel Steel, Round Bars in Stock, having Minimum Elastic Limit 95,000 lbs. per square inch. This Steel can be Oil or Case Hardened so as to have an Elastic Limit of over 200,000 lbs.**

Use this “Toughest Stuff” and eliminate the Breakages you are now having.

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KRUPP STEEL LOCOMOTIVE TIRES AND CAR WHEEL TIRES, CRANK SHAFTS, STEEL FORGINGS AND CASTINGS, STEEL TIERED CAR WHEELS, PROSSER BOILER TUBE EXPANDERS

### COL. SPRAGUE'S NEW 1909 AUTO TOPS and FRONTS

## OUR NEW 1909 FRONTS

The only front that is imitated and acknowledged the only best.

Absolutely simple.  
Absolutely strong.  
Absolutely easy to polish.  
Absolutely quiet.  
Absolutely good.  
Absolutely what you want if you desire the best.

Ask for our 1909 Catalogue.  
It's an art gem. Inquire about our New Runabout Tops.

**THE SPRAGUE UMBRELLA CO.**  
NORWALK, OHIO





## See that **BAR**

ROUND and SMOOTH on the TIRE-SIDE and too heavy to WEAR OUT—

The ONLY DEVICE RELIABLE and DURABLE for 3-inch and 4-inch Solid Tires. The tires may wear down to the rims without altering shape of shoes.

## The PERFECTION SKID-PROOF CLIMBER

The PERFECTION is the only device which CANNOT CUT the Tires and WILL NOT WEAR OUT. It is noiseless, effective and indestructible. Write THE PERFECTION NON-SKID CLIMBER CO., EDON, OHIO

"You Screw the Battery In—We've Done the Rest"

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Steel Battery Box

ADMITTEDLY the BEST Battery Equipment for a Car, BECAUSE

- 1st—No binding posts or wires—setting up or renewal of battery as easy as an incandescent lamp—in fact, done in the same way!
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You'll save both time and money with Stanley & Patterson Batteries after you've seen this battery set. It's IDEAL! Each unit renewable even with your gloves on. The most-talked-of invention in the electrical field. Send for Bulletin "62"

**STANLEY & PATTERSON, 23 Murray St., New York**

"Columbia," "Eastern," "Nungesser 1900," "Stackpole," "Red Seal," "Hi-up," "Mesco," and other makes of Batteries now furnished in this "Screw Top" Pattern. Just specify "Screw Top" in place of old Binding Post type of cell.

See our exhibit at Madison Square Garden, January 16 to 23—Space No. 522



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THE SUPERLATIVE IN AUTO TRUNK CONSTRUCTION

Each of the wide range of models is a masterpiece of Quality—Style—Refinement—Lightness—Strength—Compactness—Capaciousness—Accessibility, and Absolutely Weather and Dust Proof.

A good car deserves good equipage—why not get the BEST—the JOHN BOYLE MAKE—and secure lasting satisfaction.

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Write for Style Book and Prices for the Various Makes of Cars



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the greatest device in the world for saving your automobile. Applicable to all cars—efficient on all. The only practical cure for hard riding cars, relieving the body of all injurious shocks, jolts and jars. No more broken side springs. Fully patented and fully guaranteed. They will save their cost many times in a year and will add NEW LUXURY, NEW LIFE, NEW SPEED, NEW COMFORT.

THE PRICE—is about one-half that asked for complicated devices that at best can produce temporary results only. Write for full information and prices. BEWARE OF IMITATIONS.

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Branches: New York, Motor Mart Bldg., 1876 Broadway. Chicago, 1218-20 Michigan Ave. Boston, 880 Boylston St. Pacific Coast, Los Angeles, San Francisco.



## LOCKE & COMPANY AUTOMOBILE BODIES

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WITHOUT PARALLEL IN THIS COUNTRY OR ABROAD  
COMBINE EXTREME ELEGANCE, MOST REFINED  
DESIGNS AND UNEXCELLED DURABILITY



## THE FASTEST STOCK CAR IN THE WORLD

It will instantly appeal to those requiring the VERY BEST

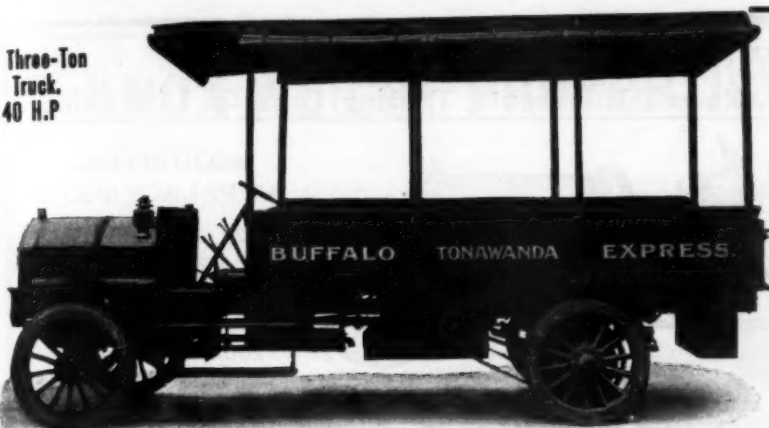
Six Cylinders, 5" bore, 6" stroke. Weight, exactly 3250 lbs.  
For 1909—60 H.P., price, \$5,500 f.o.b. factory.

**CHADWICK ENGINEERING WORKS**

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"Standard Manufacturers A. M. C. M. A."

Three-Ton  
Truck.  
40 H.P.



## Gasoline **TRUCKS** Electric

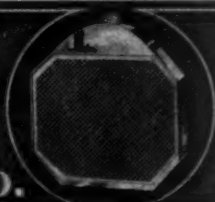
We manufacture both electric and gasoline trucks in all capacities, from a light delivery car to a five-ton truck. Let us meet your requirements, as we are the oldest manufacturers in America.

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INTAKE, EXHAUST  
Whitlock Coil Pipe Co.



**RADIATORS**  
AND WATER PIPES  
Hartford, Conn.

# The **McCUE** CAR

Grand Central Palace Show, Dec. 31-Jan. 7



## CARBURETER

is absolutely the only one on the market to-day that maintains a uniform mixture in the

## COLDEST WEATHER

Send for full particulars and proof of our claim

**THE PETRE CARBURETER CO.**  
CLEVELAND, OHIO

High-grade cars need high-grade carbureters.  
DEALERS — Don't fuss with any others.

**PETREL**  
"6"  
\$2500

Will Not Be at  
New York Shows



General lines and appearance of Petrel "6,"  
practically identical with Petrel "4"

# PETREL

## Specifications

Petrel "4" Roadster, \$1350  
Motor 4-cylinder  
4 3-8 x 4 3-4  
Ignition . . . Battery  
Drive, Walte Friction  
Double Chain

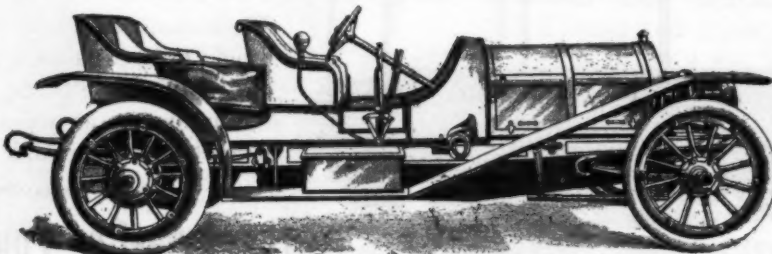
Frame . . . Pressed Steel  
Tires . . . 32 x 3 1-2  
Wheel Base . 106 inches  
Weight, 1800 pounds,  
60 pounds per horsepower

**PETREL MOTOR CAR CO.**

**KENOSHA, WISCONSIN**

AGENTS WANTED WHERE NOT REPRESENTED

1909 MODELS include 48 H. P. Racers, Runabouts, Touring Cars &amp; Limousines

MEDOWBROOK  
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AT PALACE SHOW17-22 H. P. TOWN  
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## The 1909 ROYAL TOURIST

Speedier, longer, roomier, stronger, easier riding and more readily accessible, the Model "M" is without doubt the most permanent car in every particular that has yet been presented to the motor world.

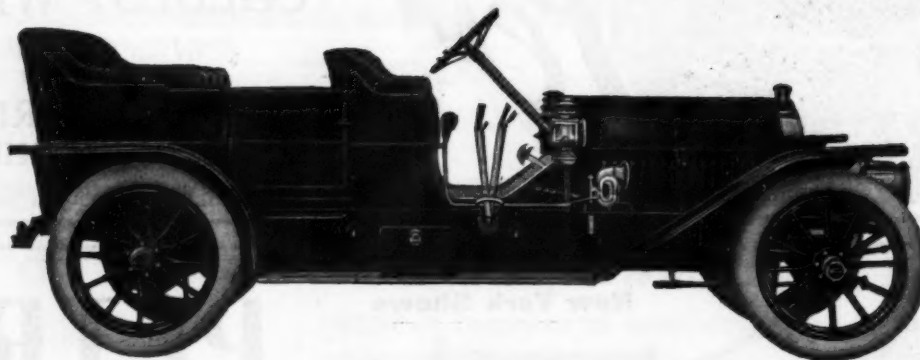
The Royal Tourist Car Company, Cleveland, Ohio

THE TEST OF SERVICE IS ALL WE DEMAND

MEMBERS OF A. L. A. M.

The  
1909

National



"Just as Faultless as it Looks"

Four Models, "Fours" and "Sixes," all of them superb in design, construction and service

Model "9-35".....Four Cylinders, 41x41.....\$2,750	Model "9-50".....Six Cylinders, 41x41.....\$4,200
Model "9-40".....Four Cylinders, 5 x5 .....\$3,700	Model "9-60".....Six Cylinders, 5 x5 .....\$5,000

Type of body is optional—Touring, Roadster, Limousine or Baby Tonneau

We have the best proposition for dealers with a high-class trade

National Motor Vehicle Co., 1000 East 22d St., Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

## KNOX WEIGHT PROPORTIONATE TO HORSEPOWER

The proper weight in proportion to the power is a point very carefully considered by the motor car manufacturer. Any maker can build cars with this point in mind, but to build one that will withstand hard use and still be comparatively light requires the careful working out of all parts so that continued shocks and strains will prove their ability to stand hard service.

In designing Models "M" and "O" we have used our best endeavors to keep the weight as low as is consistent, and the following table will prove that we are considerably under the average maker when size and rated horsepower are taken into consideration:



Knox Model "O" 38 H. P. Roadster. Weight, 2650 lbs., or 69.6 lbs. per Horsepower.

Model.	Weight as catalogued.	Rated power A. L. A. M. formula.	Pounds per rated H.P.
"O" Touring Car.....	2,850 lbs.	38.025	74.9
"O" Roadster.....	2,650 lbs.	38.025	69.6
"O" Tonneauette.....	2,800 lbs.	38.025	73.65
"O" Limousine.....	3,000 lbs.	38.025	78.9
"M" Touring Car.....	3,850 lbs.	55.	70.
"M" Limousine.....	4,350 lbs.	55.	79.
"M" Roadster.....	3,200 lbs.	55.	58.

Knox ability to win contests has been fully demonstrated in contests of 1908, and their ability to win customers is being proved daily.

**Mr. Dealer:** The cars having the most good qualities are the easiest as well as the best to sell.

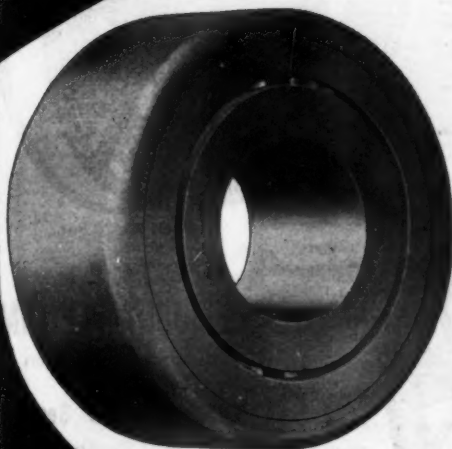
Good representatives wanted in open territory. We will show at Madison Square Garden Show, Space 1, and Chicago Show, Space ... Write for catalogue and information.

## Knox Automobile Company, Springfield, Mass.

Member A. L. A. M.

# TWO-IN-ONE

## NEW DEPARTURE TWO-IN-ONE BALL BEARING



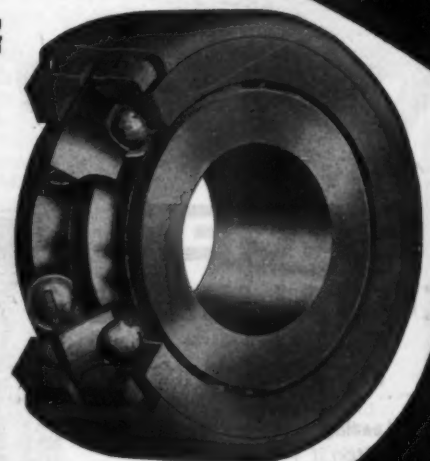
The only bearing that is **equally strong in all directions.**

The only bearing that will take thrust from any direction, or radial load or combination thrust and radial load.

**Positively Economizes Space, Weight, Labor, Material, Cost.**

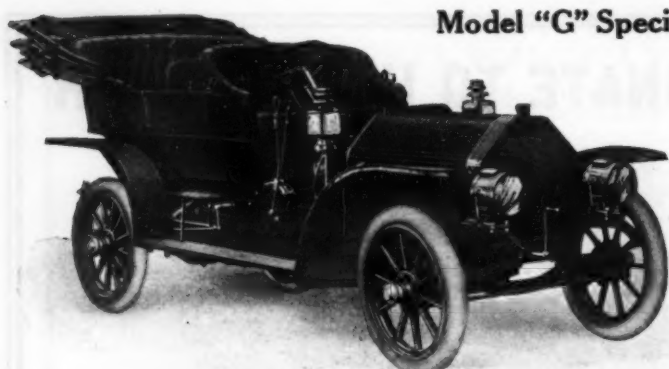
**FULLY GUARANTEED**

All inquiries fully answered. Write



**The New Departure Manufacturing Co.  
BRISTOL, CONN.**

We will exhibit at Grand Central Palace Show, New York, Space 407, Section J, third floor; also at Madison Square Garden Show.



Model "G" Special

# Glide

\$2500

You Know Automobiles

## READ THESE GLIDE SPECIFICATIONS

**T**HE Glide is the first car perfect in size, in mechanism and in action that has ever been offered to the public at a correct price.

Many years of automobile building are back of every Glide—years of fruitful experience that have added to the merits and popularity of GLIDE cars.

The power plant is a 4-cylinder (cast separately) 45 actual H.P. motor. The crank shaft has 5 bearings—as it should have.

A constant level oiling system, eliminating piping and automatically maintaining the proper level of oil in the crank case at all times.

An improved form of selective type of transmission, located just forward of the rear axle, reducing the angularity of the propeller shaft.

A rear axle with liberally proportioned parts, and of a construction that gives an absolute assurance of perfect work.

A multiple disc clutch with discs of large diameter.

Double set of brakes—internal expanding and external contracting. Brake drums are 16 inches diameter, 3-inch face—will hold the car on a mountain grade. Absolute confidence in ability to slow down or halt at will is established when Glide brake equipment is examined. No brake system on any American or Foreign car has ever before been so comprehensively treated.

One Universal Joint only in GLIDE cars, located between the motor and the

Glide Roadster Model "R"—same chassis—Wheel base—36 x 4-inch tires all around, with either close coupled body seating 4, or Runabout body seating 2—\$2,000.

Glide cars will be exhibited at the Chicago Show. Floor space H-1, immediately at the right of the main entrance—Wabash Ave.

transmission. Remember, there are not two joints or three joints, or even four, as in other constructions. Timken Roller Bearing throughout—all gears of the best Alloy steel.

34 x 4½-inch tires all around—Wheel base 120 inches. Remember, tires are all alike, not 34 x 4-inches in front and 34 x 4½ inches in the rear, thus obviating the ridiculous necessity of carrying two sizes of spare casings and tubes.

The GLIDE is not an assembled car. It is built in our own shops, the motor excepted.

The GLIDE cars are sold before dealers buy them.

Buyers know that Glide cars at \$2,000 and \$2,500 are better cars than they can get for the same money anywhere else.

They know not only because of our extensive Glide advertising, but also because of Glide demonstrations and widely increasing sales.

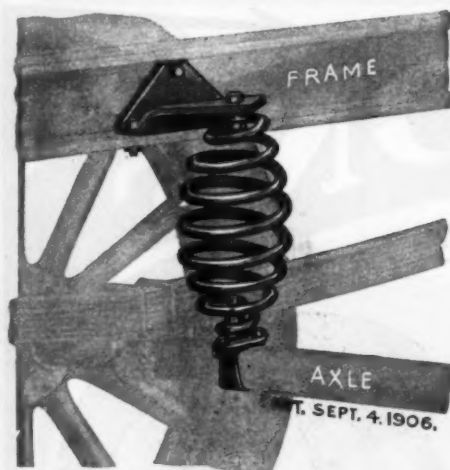
Our advertising helps you sell Glide cars—and every sale brings another sale to you.

Our position is the one all manufacturers must take sooner or later—giving full value for the price.

We have open territory for live progressive dealers who want a permanent business built on the growing popularity of the Glide.

Write to-day for 1909 agency contracts and proof that the Glide agency is the best proposition you were ever offered.

**The Bartholomew Co.,** Standard Manufacturers **235 Glide St., Peoria, Ill.**  
A. M. C. M. A.



## SAGER EQUALIZERS

Over 35,000 in Use

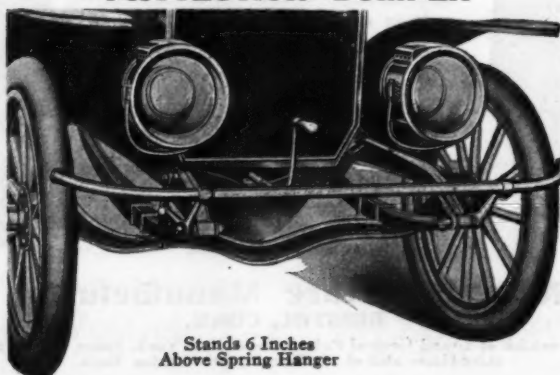
18 Leading Makers Endorse Them.  
You will too if you try them.

**J. H. Sager Co.**

## YOU'VE TRIED THE REST, NOW TRY THE BEST

"We are entirely satisfied with them." **Elmore Mfg. Co.**  
"The 'Sager Device' presents advantages not found in other so called 'Shock Absorbers'." **Olds Motor Works.**  
"They add greatly to comfort and reliability." **Crawford Automobile Co.**  
"We find them indispensable." **Logan Construction Co.**  
"Our customers are more than satisfied with them." **Dorris Motor Car Co.**  
"Have given us very excellent satisfaction." **Thomas B. Jeffrey Co. (Rambler.)**  
"In the last three years we have used quantities of your springs, which have given excellent satisfaction." **Dayton Motor Car Co. (Stoddard-Dayton.)**  
"Used your springs with splendid success." **The Autocar Co.**  
"We claim 1908 will be a Sager year." **Meteor Automobile Works.**  
"A great benefit and we cannot speak too highly of them." **The Forest City Motor Car Co. (Jewel.)**  
"Give perfect satisfaction." **Evansville Automobile Co. (Gearless Automobile.)**  
"We found your springs to be satisfactory." **Pope Mfg. Co.**

## PROTECTION BUMPER



Stands 6 Inches  
Above Spring Hanger



Pat. Appl'd For.

## THE DEMOUNTABLE RIM

that you have been  
waiting for.  
Detached in 30 Seconds

See US at the Shows or  
write for particulars.

**267 South Avenue  
ROCHESTER, N. Y.**

Protects  
Lamps,  
Radiators  
and Tires.  
Easily  
attached to  
any Car.

Two Styles  
--Plain  
Black or  
Polished  
Brass.

Write  
to day for  
full  
particulars

# The New Stevens-Duryea Models XXX and Y

are typical Stevens-Duryea productions

The latest links in the chain of STEVENS-DURYEA SUCCESSES.

The XXX—A 24 Horse Power Four Cylinder Runabout - - - Price, \$2,850

The Y—A 6-40 Horse Power Six Cylinder Touring Car - - - Price, \$4,000

The Four Cylinder Model X, of the past season, and Six Cylinder Model U (Light Six) of the past two seasons, will also be 1909 STEVENS-DURYEA CARS.

On exhibition at 1909 Licensed Association Auto. Shows.

*Write for Descriptive Literature.*

## Stevens-Duryea Company

900 Main Street

CHICOPEE FALLS, MASS.

Members Association Licensed Automobile Manufacturers

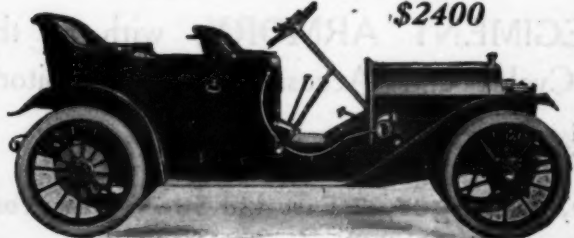
# THE MARMON

"A Mechanical Masterpiece"



Marmon "Thirty-Two"

\$2400



## This Car Represents Economy—Not Cheapness

Over and above the fact that this is a car that will live, that you can depend upon and be proud to own—

It is a car offering a positive, proven value which you can get right down to brass tacks and figure out.

Figure up its equipment, note that its design includes all the best things in motordom, take into consideration Marmon workmanship, materials and construction methods, and then compare it with anything on wheels at \$3,000 or less. Send for the detailed specifications.

Genuine Krupp and Chrome Nickel steels used for important parts. Bosch magneto and battery—dual system. Hess-Bright ball-bearings. Transmission and rear axle in one unit. Large brakes. Marmon oiling system. Weight, 2100 lbs. 32-40 H. P. Tires, 34x4, all around. Complete equipment. Touring Car, Roadster, Four-Passenger Suburban, Coupe, or Limousine Town Car.

The superb Marmon "Fifty" (Seven-Passenger Body), \$3750

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.  
Standard Mfrs. A. M. C. M. A.

At Chicago Show, February 6-13

## The Easiest Riding Car In The World

OUR FACILITIES FOR MAKING

**DROP FORGED**—

**PRESSED STEEL**—

**HAMMER FORGED**

**MACHINED and GROUND**

Crank Shafts  
Connecting Rods  
Control Levers  
Gear Blanks  
Frames  
Radius Rods  
Rear Axle Housing  
Small Parts  
Crank  
Front Axles

Parts of All  
Descriptions

insure our customers against loss of material in process, also prevent delays.  
We cordially invite an inspection of our works.

**DRIGGS-SEABURY ORDNANCE CORPORATION, Sharon, Pa.**

Send blueprints or sketches for quotation

# THE NATIONAL SHOW CHICAGO

will be held as usual at

Under the auspices of the NATIONAL ASSOCIATION  
OF AUTOMOBILE MANUFACTURERS, INC.

## February 6 to 13

in the COLISEUM AND FIRST REGIMENT ARMORY, with all the  
leading makers of Motor Cars, Motor Cycles and Accessories as exhibitors.

THE USUAL COURTESIES WILL BE EXTENDED TO VISITING AGENTS

S. A. MILES, Manager, 7 East 42d Street, New York

### All the Manufacturers in One Show

**AT THE PALACE SHOW:** Their advance into third place in tire equipment by a wide margin is merely an incident in the

**GROWING PRESTIGE**

**OF**

**"Firestone"**

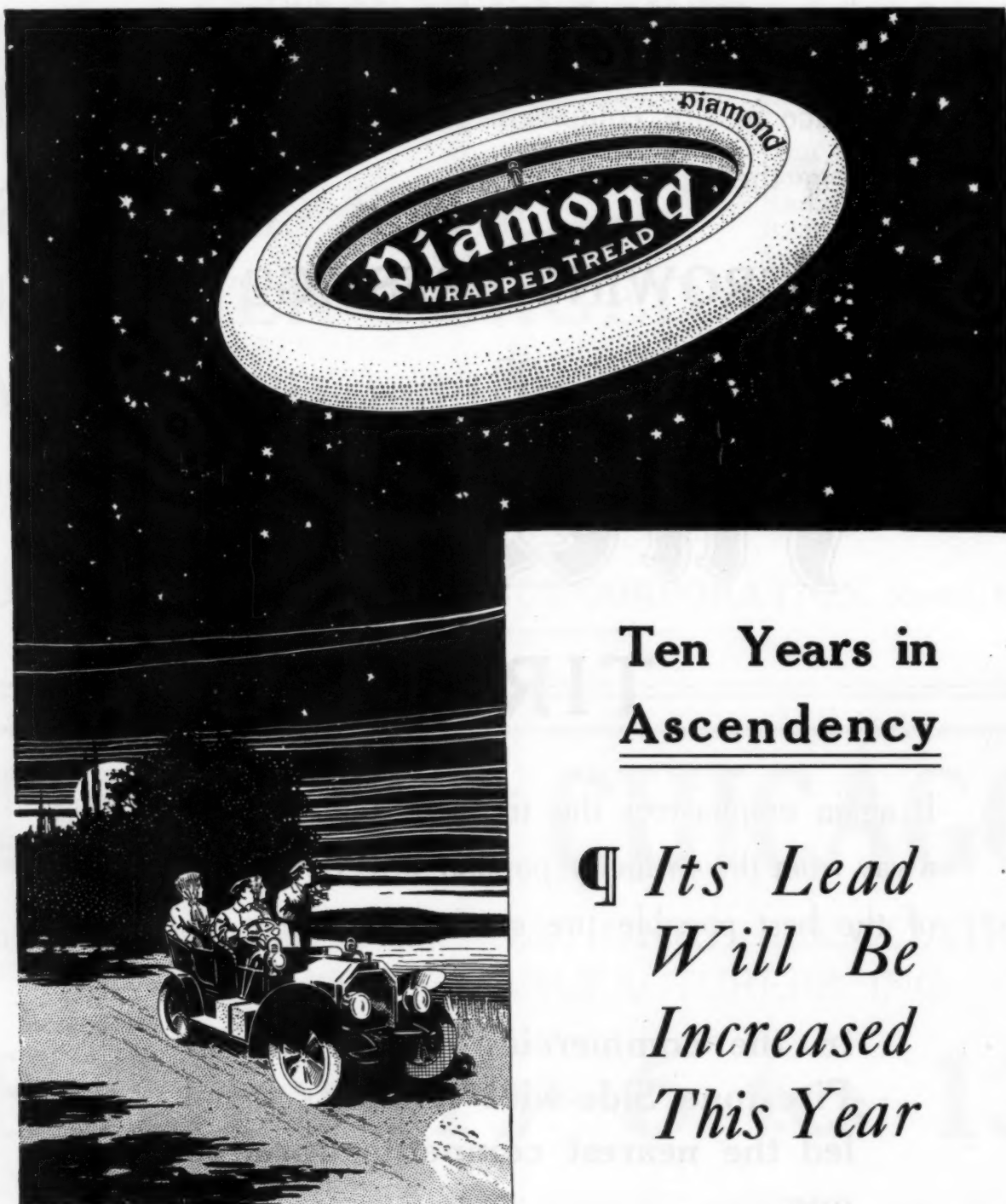
**TIRES**

It again emphasizes the trend of public preference away from the ordinary popular priced tires in favor of the best possible tire service.

**In the commercial vehicle section  
Firestone Side-wire Tires as usual  
led the nearest competitor three to  
one.**

**FIRESTONE TIRE & RUBBER COMPANY, AKRON, OHIO**

*Branches and Agencies almost everywhere.*



**Ten Years in  
Ascendency**

¶ *Its Lead  
Will Be  
Increased  
This Year*

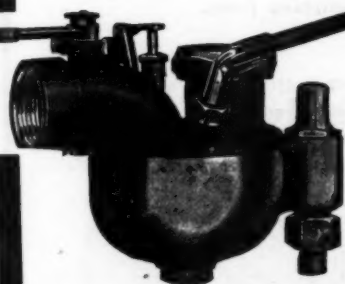
**The Diamond Rubber Co.**

**Akron, O.**

# Adjust the Mixture while you drive

by Using the Holley Model W Carburetor with Dashboard Adjustment

Changes in fuel density—changes in temperature and humidity of the air—and many slighter influences affect the quality of the mixture.



Adjusting the carburetor correctly with the car standing still and the motor running light is next to impossible; you do not get road conditions. If the carburetor has three or four adjustments, like most automatic carburetors, your way is doubly obscure; you are not sure which adjustment to change, and you are not sure whether an apparent gain in power will hold good on the road.

Because of the lack of certainty in multiple-adjustment carburetors, the fine day-to-day regulation which keeps the motor always working at concert pitch is generally neglected; an average adjustment is adopted, and is never or seldom changed.

The owner of a *Holley Model W* adjusts it *while he drives*, in an instant and without guesswork. A universal joint on the needle valve connects to a rod running through the dashboard. At the end of the rod is a graduated dial and lever. You can adjust for a cold start, for warming up, for a sudden shower, for a change in fuel density, for a bad hill or stretch of sand—for any special condition, no matter how sudden. There is but one thing to touch, and it is always under control. If dirt lodges in the needle orifice, you can momentarily open the needle and return it to the same setting, thus washing out the dirt—all while the car is running. And the gasoline you save in a season or two will pay for the carburetor.

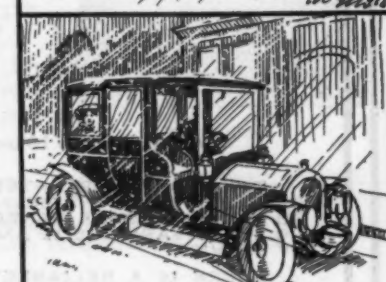
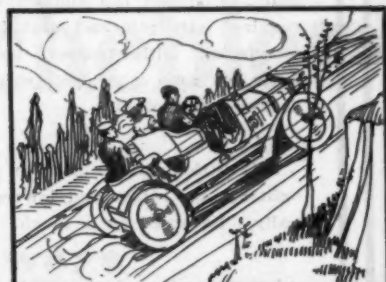
Regular Top or Side Outlet/Models	
4".....	\$7.50
1 1/2".....	7.50
1 1/4".....	8.00
1 1/2".....	9.00

With Universal Joint and Dial Adjustment— Top or Side Outlet	
4".....	\$10.50
1 1/2".....	10.50
1 1/4".....	11.00
1 1/2".....	12.00

**HOLLEY BROTHERS CO., Detroit, Mich.**

#### SELLING AGENTS

New York City: New York Sporting Goods Co., 17 Warren Street  
Pacific Coast: San Francisco, Calif., Geo. P. Moore & Co.; Los Angeles, Calif., Geo. P. Moore & Co.;  
Oakland, Calif., Geo. P. Moore & Co.  
New England: Hartford, Conn., Post & Lester Co.; Boston, Mass., Post & Lester Co.



## Common Sense About Auto Jacks

In advertising RELIABLE JACKS we don't ask you to take our word for anything. Not that our word isn't good, for it is, but we know that your judgment is more to you than our word.

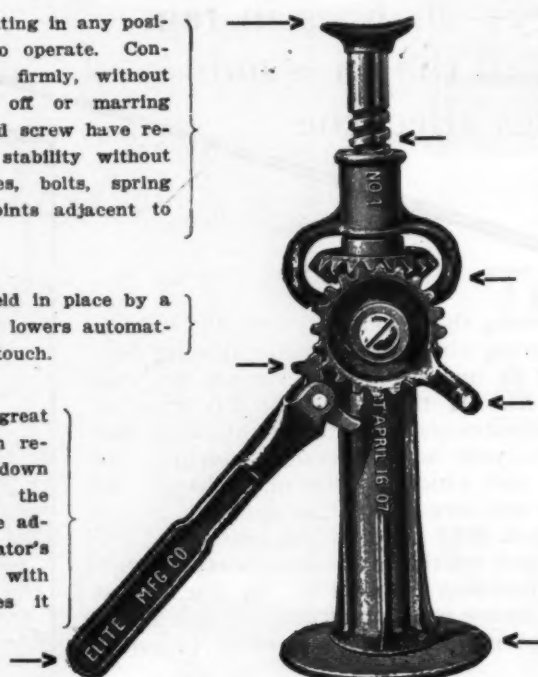
We could tell you that the RELIABLE is the best automobile jack made, but we prefer to show you how it works and let you decide that for yourself. If you consider it from a wholly unprejudiced standpoint, there can be but one decision. We are willing to rest our case on your decision.

**See for yourself the features upon which we lay our claims for the superiority of RELIABLE JACKS**

Swivel top permits setting in any position most convenient to operate. Concave, holds axles, etc., firmly, without possibility of slipping off or marring paint. Compact top and screw have required strength and stability without interfering with trusses, bolts, spring seats, or any other points adjacent to desired point of lift.

This little latch is held in place by a light spring; raises and lowers automatically. Reversed by a touch.

Long handle gives great leverage; little strength required. Easy up and down movement. Lifts on the down stroke, giving the advantage of the operator's weight. Smooth and with rounded corners makes it easy on the hands.



Large screw of special steel, carefully machined, works smoothly; gives straight, steady lift of unusual height.

These gears merely turn the screw, which in turn raises the load. Much easier than to lift direct as in rack and pawl jacks. Holds at any point without danger of slipping down.

This crank adjusts the screw up or down to the desired height, quickly, without pumping, and without soiling the hands on cogs or other parts.

Large flat base gives stability, lessens liability of car tipping or rolling off, and does not sink into soft earth so readily under weight.

## Reliable Jacks

Six models—2 to 10 tons capacity. For Autos, High Wheeled Vehicles, Traction Engines, Street Cars, Etc.

THE JACK ILLUSTRATED ABOVE IS THE RELIABLE NO. 1, MADE IN TWO SIZES—2 AND 3 TONS CAPACITY, RESPECTIVELY. THE RELIABLE LINE ALSO INCLUDES FOUR OTHER MODELS WITH CAPACITIES FROM 2 TONS TO 10 TONS. THESE OTHER MODELS ALL HAVE THE SAME GENERAL FEATURES OF SUPERIORITY AS MODEL NO. 1, BUT VARY IN SIZE AND IN SUCH POINTS AS MUST NECESSARILY BE CHANGED FOR DIFFERENT KINDS OF SERVICE.

THERE IS A RELIABLE JACK BUILT FOR EVERY KIND OF JACK USE. IF YOU NEED ANY KIND OF A JACK, A RELIABLE IS WHAT YOU ARE LOOKING FOR. IF YOU ARE USING AND KIND OF A JACK, SEE THE RELIABLE, AND YOU'LL THROW THE OTHER AWAY.

SEE THE RELIABLE AT THE AUTOMOBILE SHOWS; ASK YOUR SUPPLY DEALER TO SHOW YOU ONE; WRITE US FOR LITERATURE DESCRIBING THE RELIABLE JACKS AND A SOUVENIR HANGER SHOWING THE CARS WITH WHICH THE RELIABLE IS REGULAR EQUIPMENT.

IF YOU ARE BUYING A NEW CAR INSIST THAT YOUR DEALER EQUIP IT WITH THE RELIABLE JACK YOU WANT.

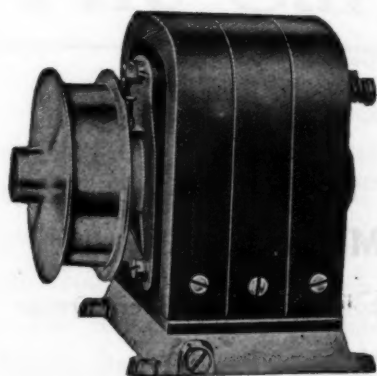
**THE ELITE MANUFACTURING COMPANY**  
ASHLAND, OHIO



Get a Magneto You Can Depend on

# The Wheeler & Schebler MAGNETO

Never Fails—Dependable Always



Side View

The greatest invention of the age for automobilists. Its use gives you positive assurance that all your ignition troubles are over.

You never know when you are going to have a breakdown with the old battery system; it's liable to happen any time—anywhere—in town or on tour—but when it does, that's when you appreciate the value of the dependable "Wheeler & Schebler" Magneto.

**Why Take Chances When Certainty Is at Hand?**

Equip your cars with "W & S" Magneto and you have absolutely the best, most perfect and economical system.



End View

The only wearing parts are a pair of imported annular Ball Bearings, we having done away with the commutator and brushes common on other makes. It has no wound rotators to burn out. It requires no governor, thus avoiding any trouble to which that part would be subject. It furnishes alternating current, making it impossible to burn out the coil. It does not pit nor wear away the vibrator points. It is the only magneto which will give sparks each revolution at the shaft. It increases the power at the engine from ten to twenty per cent. over batteries.

**Price \$35**

It excels any ignition system on the market to-day, and we can prove it. WRITE TO-DAY.

## WHEELER & SCHEBLER

MANUFACTURERS  
INDIANAPOLIS, IND.

# EVERY CAR runs "GOOD" on TIMKEN BEARINGS

## That's why all the good cars use them

Look at this list of prominent Motor Cars and Transmission Makers who use **TIMKEN BEARINGS** either altogether or in part.

Peerless Motor Car Co.  
Packard Motor Car Co.  
F. B. Stearns Co.  
Locomobile Co. of America.  
E. R. Thomas Motor Co.  
Winton Motor Carriage Co.  
Lozier Motor Co.  
Royal Motor Car Co.  
Apperson Bros. Auto. Co.  
Austin Auto. Co.  
Matheson Motor Car Co.  
Olds Motor Works.  
Dayton Motor Car Co.  
Chalmers-Detroit Motor Co.  
Pope Mfg. Co.  
Haynes Auto. Co.  
H. H. Franklin Mfg. Co.  
Premier Motor Mfg. Co.  
Electric Vehicle Co.  
Nurdyke & Marmon Co.  
Buick Motor Co.  
Dorris Motor Car Co.  
Autocar Co.  
York Motor Car Co.  
Kissel Motor Car Co.  
Bartholomew Co.  
Acme Motor Car Co.  
Speedwell Motor Car Co.  
Forest City Motor Car Co.

Colburn Auto. Co.  
Atlas Motor Car Co.  
Auto Vehicle Co.  
Buckeye Mfg. Co.  
Bloomstrom Mfg. Co.  
Duro Car Mfg. Co.  
E. M. F. Co.  
Grout Auto. Co.  
Hewitt Motor Co.  
T. B. Jeffrey & Co.  
Oscar Lear Auto. Co.  
Midland Motor Co.  
Moline Auto. Co.  
Marion Motor Car Co.  
Mason Motor Car Co.  
Smith Auto. Co.  
Selden Motor Vehicle  
Velie Motor Vehicle Co.  
H. E. Wilcox Motor Co.  
And many others.

### ELECTRICS.

Anderson Electric Co.  
Columbus Buggy Co.  
Rauch & Lang Carriage Co.  
Waverly Co.  
C. P. Kimball & Co.  
And many others.

There could be no more conclusive proof of merit than this practical endorsement.

## ONCE A TIMKEN USER ALWAYS A TIMKEN USER

**There's a reason.**—Every Manufacturer knows it. Every Dealer should know it. Every Owner will insist on **TIMKEN BEARINGS** if they know it.

See the **TIMKEN EXHIBIT** at the Shows or write direct for illustrated descriptive matter.

We will exhibit—

Grand Central Palace, Dec. 31st-Jan. 7th.  
Madison Square Garden, Jan. 16th-Jan. 23rd.  
Chicago, Feb. 6th-Feb. 13th.

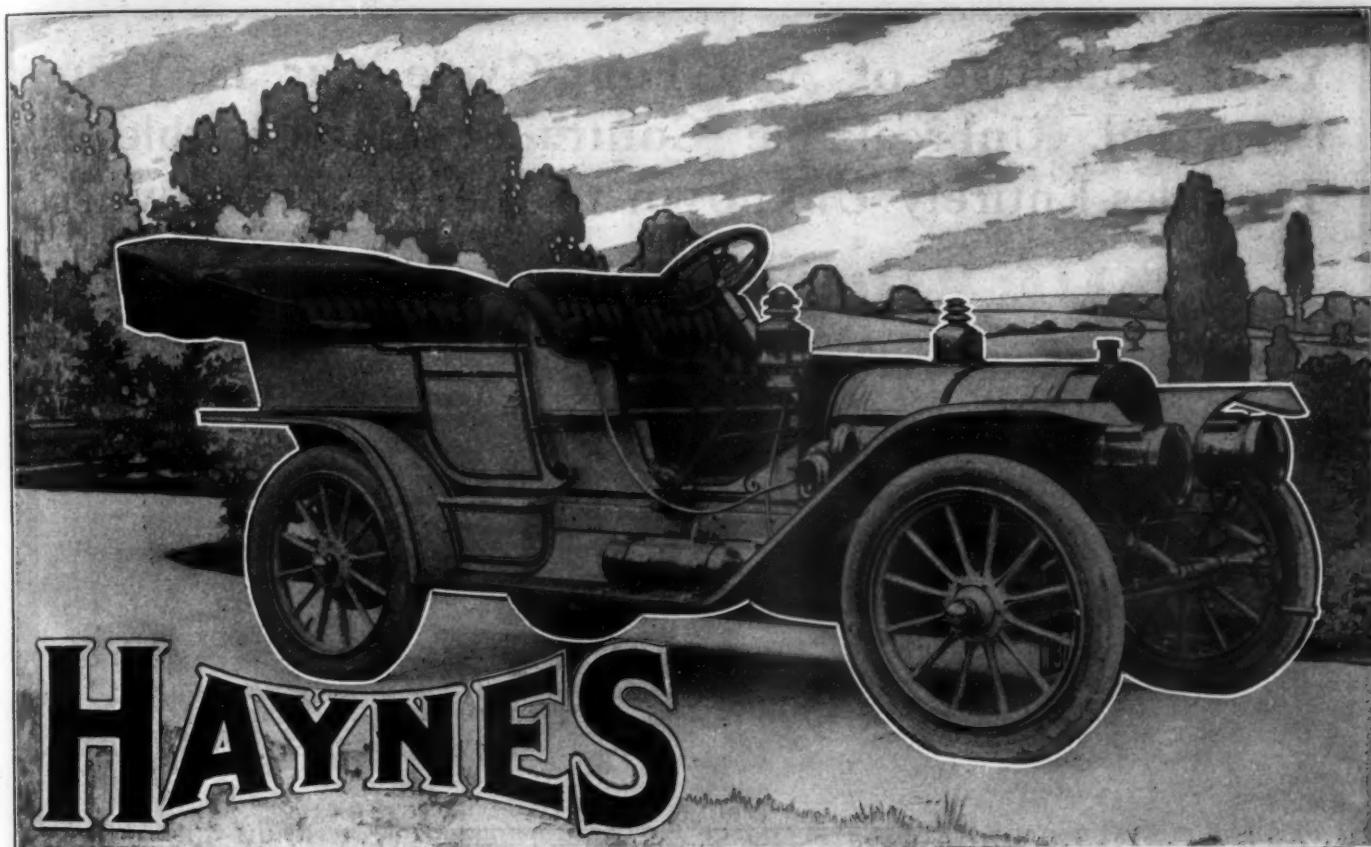
# THE TIMKEN ROLLER BEARING AXLE CO.

## CANTON, OHIO

### BRANCHES

NEW YORK: 10 East 31st Street

CHICAGO: 429 Wabash Avenue



The Haynes for 1909—40 H.P., \$3,000

## The Car to Buy—And Why

Haynes Cars are built for strength. We use more different kinds of steel alloy than any other makers. We spend more money for the services of expert metallurgists. Everything about the Haynes is *big, solid, substantial*.

The results show in Reliability Runs. "The Haynes always makes a perfect score." Last year it won the only perfect score that was awarded in the big Chicago Motor Club Run. This year there were two Haynes entries. They both were among the five that won Perfect Scores.

We have been making cars since 1893. We sin-

cerely believe that our experts (who have been with us from the beginning) know more about making automobiles that run than any other makers. The results prove it.

The loyalty of Haynes owners to us is a big asset to an agent. Some of our friends who started automobiling in the nineties, when we were lone pioneers in the industry, are now owners of a fifth or sixth generation of Haynes Cars. We have an established clientele all over the country.

We want to place a few more good, hustling agencies. Write for particulars.

### HAYNES AUTOMOBILE CO., Kokomo, Indiana

Oldest Automobile Manufacturers in America

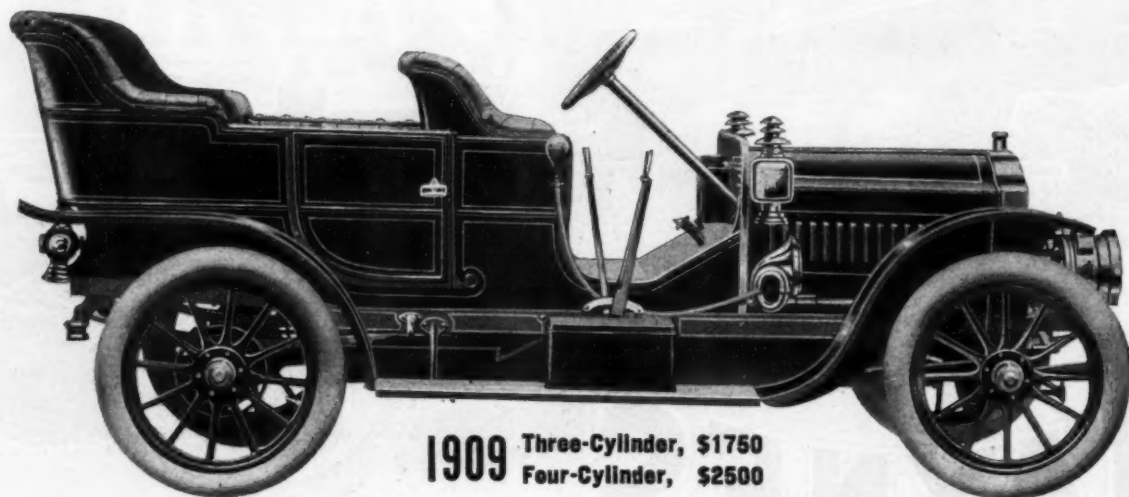
NEW YORK, 1715 Broadway

42 Highest Awards and Perfect Scores

Members A. L. A. M.

CHICAGO, 1702 Michigan Ave

## Your Purchase of Any Four-Cycle Car Is Your Perpetual, Unbreakable Contract with Troubles—Troubles Entirely Unknown to the Elmore Owner



1909 Three-Cylinder, \$1750  
Four-Cylinder, \$2500

Right now you are most likely considering the purchase of some four-cycle car.

The question that vexes most is whether it shall be one with a four-cylinder or a six-cylinder engine.

But that which seems so important to you shrivels to insignificance before the greater question of four-cycle or two-cycle.

For on the latter—**entirely** on the latter—depends your future satisfaction with the car you buy.

Yes, the very life of the car itself is prematurely shortened, or indefinitely prolonged, by the principle of its motor—four-cycle or two-cycle.

If you understood the Elmore valveless two-cycle car, there could be no question in your mind. Your decision in favor of the Elmore would be a foregone conclusion.

You would know why the Elmore runs



and runs and runs, with never a bit of unnecessary trouble or exasperation or expense—just as every present Elmore owner knows.

You would realize what you don't know

now—how all-powerful is the influence of valves.

The Elmore engine has no valves; it produces the smooth, constant rhythm of power known as continuous torque—something that no four-cycle engine, no matter how many cylinders it has, can do.

These differences are comprehensively explained in the 1909 literature. Get it and study it until you are perfectly familiar with the Elmore valveless two-cycle engine.

Then seek the Elmore dealer and a demonstration of the car. The dealer has been allotted as many cars as he can obtain, so you realize the necessity of deciding without delay.

### THE ELMORE MFG. CO., 1304 Amanda Street, Clyde, O.

Member Association of Licensed Automobile Manufacturers

THE ELMORE WILL BE EXHIBITED ONLY AT THE MADISON SQUARE GARDEN SHOW, NEW YORK, JANUARY 16-23. STUDY IT THERE.

# THE SELDEN CAR

MADE BY

"THE FATHER OF THEM ALL"



ONE PRICE, \$2000—F. O. B. ROCHESTER

## TOURING CAR—ROADSTER—TOY TONNEAU

A genuinely good car cannot be made and sold for less than \$2000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor, and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4 cylinder, 28-30 H. P. (developing 37 H. P.) five-passenger Touring Car, or three-passenger Roadster, with 114 inch wheel base, 34 inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

### THE COMING CAR OF MODERATE PRICE

Catalog and Agency Proposition Upon Request

Agencies Wanted Everywhere

We will Exhibit at Madison Square Garden Show

**SELDEN MOTOR VEHICLE CO., ROCHESTER, N. Y.**

GEORGE B. SELDEN, President

Members Association of Licensed Automobile Manufacturers



Note clean lines  
of design

# 1909 Great Western 1909

The only line in America of identically the same construction throughout the various types

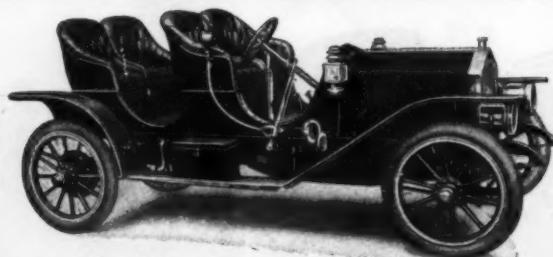


No superfluous  
detail

## NO. 20-A

With both single and double rumble seat; gas lamps and high tension magneto.

**\$1600**

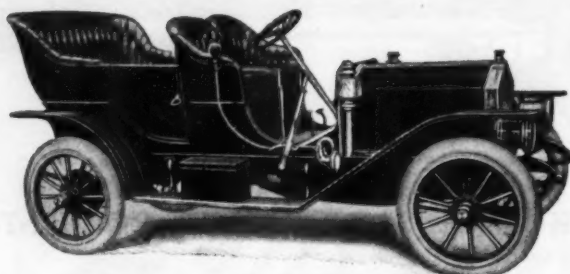


No. 20-A—63 1-3 lbs. per H. P. 30 H. P., 4 cylinder motor, 4-in. bore, 5-in. stroke. Weight, with complete equipment, 1,900 lbs.

## NO. 20

5-passenger with full equipment. Gas lamps, generator and high tension magneto.

**\$1600**

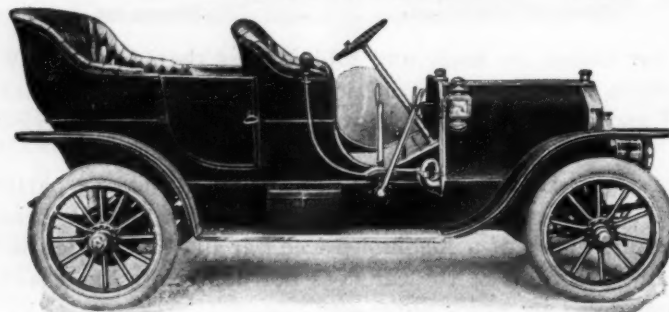


No. 20—66 2-3 lbs. per H. P. 30 H. P., 4 cylinder motor, 4-in. bore, 5-in. stroke. Weight, with complete equipment, 2,000 lbs.

## NO. 21

5-passenger with full equipment. Lamps, gas tank, high tension magneto.

**\$2500**



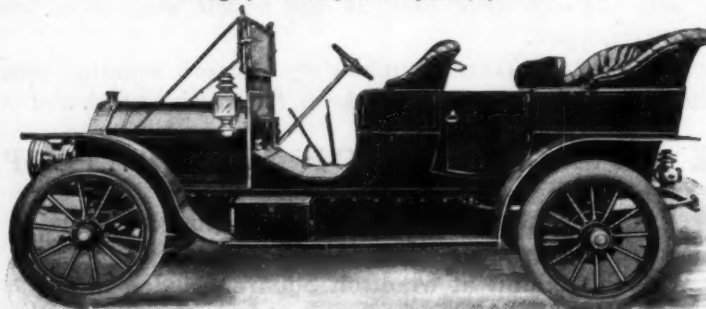
No. 21—62 1-2 lbs. per H. P. 40 H. P., 4 cylinder motor, 4 1-2 in. bore, 5 1-2 in. stroke. Weight, with complete equipment, 2,500 lbs.

## NO. 22

7-passenger with full equipment.

**\$4000**

This is the car which in the past two years averaged from 9,000 to 12,000 miles with single set of tires. Cost of upkeep never equaled on any 7-passenger car. 60 lbs. lighter this year.



No. 22—58 4-5 lbs. per H. P. 50 H. P., 4 cylinder motor, 5-in. bore, 6 in. stroke. Weight, with full equipment, 2,940 lbs.

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# Rambler

## Breaks Los Angeles-San Diego Record

New 32-H. P. Four-Cylinder Rambler Roadster Beats By 45 Minutes Time Record Established By Six-Cylinder Car And Is Awarded The Chanslor-Lyons Challenge Cup.



**T**HREE hundred and thirty miles in ten hours and thirty-two minutes and not a single stop for repairs. That is the new round trip record between Los Angeles and San Diego, California, just established by the new 32 horse power, four-cylinder Rambler roadster.

This is the second time the Rambler has made this sensational run and each time it has broken all preceding records.

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There are certain mechanical features of the Rambler which make it possible for it to excel in consistent road performance any other car at any price. If you care to know what these features are, send us your address and we will be glad to send you our new catalog.

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The 1909

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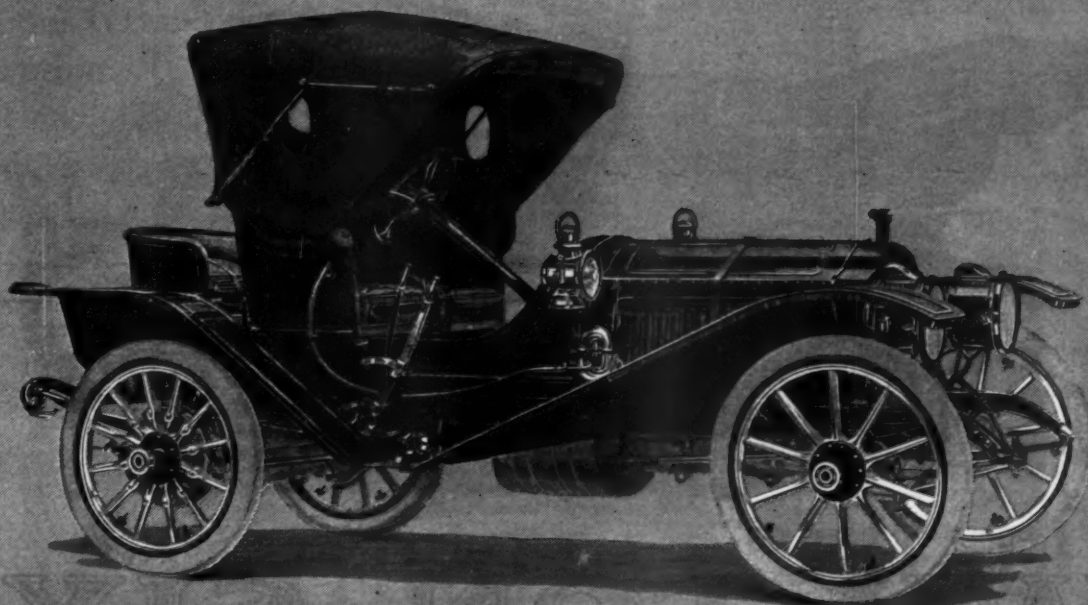
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1909



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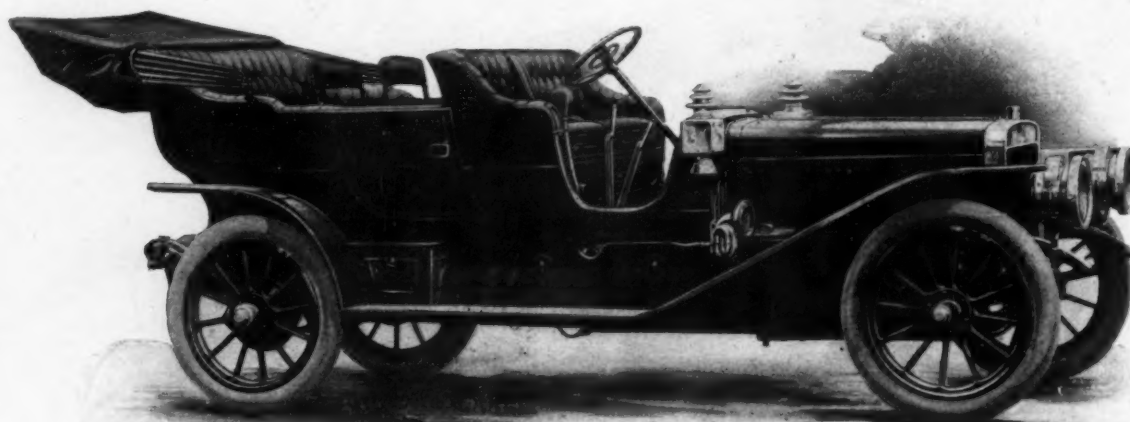
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For several years Mr. Winton has known six-cylinder cars to be superior to fours. But originally he did not anticipate marketing a six until about 1910.

His belief was that the public would not be ready for sixes until then; and you know how unwise it is to try to hurry public opinion.

Well, after marketing the four-cylinder Winton Model M in 1907—a car that to this day has no superior among fours—and finding buyers clamoring for a new merit that fours could not satisfy, Mr. Winton had no alternative. He was forced to make and market the



# WINTON SIX

two years ahead of his schedule.

Then the four makers smiled knowingly. In their opinion it was a foolish thing to put all one's eggs in the six basket.

That was more than a year ago.

Today nearly every maker who isn't marketing a six is either wishing he were, or is experimenting with one in the hope that he may produce a six to equal the self-starting, sweet-running Winton Six.

Men who own Winton Sixes enjoy a contentment that no other car ever gave them.

That's why the Winton plant is working full force, full time, and is still behind orders.

If you want a new satisfaction in motoring, we suggest that you place your order early.

Our booklet, "Twelve Rules to Help Buyers," tells how to compare cars of all makes, styles and sizes. Another booklet, "The Difference

Between Price and Value," tells what you pay for when you buy a car. Both books sent upon request.

The Winton Six carries no starting crank in front. Starts from the seat without cranking.

So flexible that gear-changing is seldom required.

Quieter than nine-tenths of the electrics you pass on the street.

Goes the route like coasting down hill.

Beautiful in its lines, superb in the character of its design and the quality of its material and workmanship.

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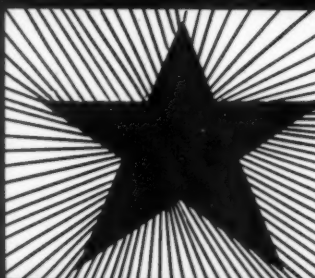
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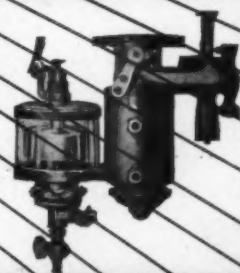
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